THE HAWAIIAN SYSTEM OF WATER RIGHTS

By

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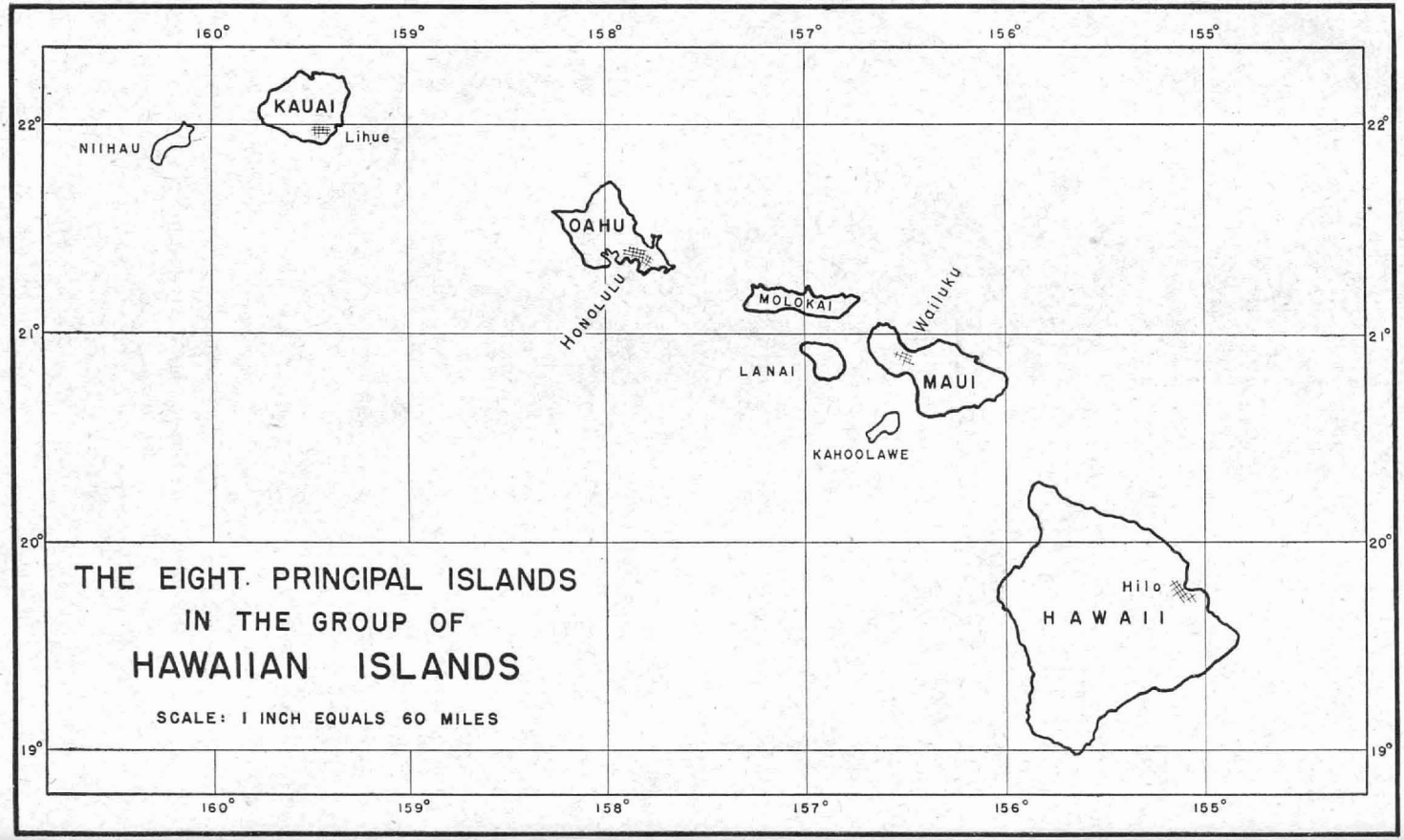
BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII
1946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MOLOKAI
Wailuku
LANAI
MAUI
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Hilo
HAWAII
THE EIGHT PRINCIPAL ISLANDS
IN THE GROUP OF
HAWAIIAN ISLANDS
SCALE: 1 INCH EQUALS 60 MILES

Foreword

Water supply has long played a very important part in the agricultural, industrial and community development of the Hawaiian Islands. Perhaps no other factor has been so fundamental in the economic life and growth of the Territory since the sugar industry got its initial start in the 1830's. Much of the normally arid land of the Territory has been made productive and the value for agricultural purposes of other areas has been greatly increased by irrigation with waters from surface and underground sources. Since agriculture is the principal industry of Hawaii, the proper production, maintenance and control of an adequate water supply is of vital concern to the welfare and future economy of the Territory.

In the earliest historical days of Hawaii all land and water rights were owned and controlled personally by the King. Grants of certain land and water rights were made by the King, usually on a temporary basis, to various of his chiefs in payment for services, loyalty, favors, etc. From time to time, especially upon the occasion of the Mahele, water rights were changed or transferred by grants, inheritances and in devious other ways until today their ownership presents a somewhat complex pattern peculiar to Hawaii. Such early water rights, either those which may have had individual titles or those that were appurtenant to land titles, were almost entirely confined to surface waters with little consideration given to ground waters. Following the completion of the first artesian well on the Island of Oahu in 1879, the development of the ground-water supply proceeded at a rapid and unregulated rate, becoming in due time the principal source of supply for the District of Honolulu and many of the sugar plantations on the Island of Oahu.

As the consumption of ground water increased the replenishment of this water by natural rainfall failed to keep pace, resulting in a marked drop of the level of the artesian water. The Beretania area, the artesian area in the Honolulu District with the most reliable long-term records, showed a drop from a level of 42 feet above sea level in 1889 to a low of 23.5 feet above sea level in 1926. This critical lowering of artesian head was similarly paralleled by the other areas in the Honolulu District and created considerable alarm

that the ground water was being seriously depleted. In 1925 the Honolulu Sewer and Water Commission, predecessor of the Board of Water Supply, was created by the Territorial Legislature to report on the water and sewerage problems of Honolulu in accordance with Section 11, Act 150, S.L. 1925.

> "The Commission shall report in full to the regular sessions of the Legislature its doings and expenditures and such recommendations as it may deem advisable to expedite and complete the sewer and water system, and to insure its adequacy and to safeguard the watersheds and artesian basins of Honolulu."

In 1927, as a result of the low artesian water levels, an amendment to the above was enacted and the scope of the work of the Commission was somewhat enlarged as shown in the following Section 17, Act 222, S.L. 1927:

> "Said Commission is further authorized and directed to report to the Legislature of the Territory of Hawaii at its next regular session, upon its work pursuant to this Act, with the recommendations of said Commission for such legislation as may be deemed necessary to provide for the systematic and economical development, conservation, use and control, by any lawful means, of the water resources available for said District for their greatest use and the largest public benefit."

This legislation gave the Sewer and Water Commission much latitude in authority for granting and refusing permission for the drilling of additional artesian wells in the District of Honolulu, and thus considerable control over the ground-water resources of Honolulu. However, the major part of the authority granted by the Territory under Section 17, Act 222, S.L. 1927, was later ruled to be unconstitutional in the case of the City Mill Company, Ltd., vs. Honolulu Sewer and Water Commission. In effect this ruling removed practically all restrictions and controls on the drilling of new wells by public and private parties.

In order to conserve the artesian water supply and prevent its unnecessary depletion and deterioration, the Sewer and Water Commission initiated several practices beginning in 1925. The principal of these included (1) metering of all services; (2) sealing of all leaking artesian wells at the expense of the Sewer and Water Commission (later the Board of Water Supply); (3) limiting the use of the artesian water for certain purposes in some instances; (4) conducting an active publicity campaign to conserve water. The effectiveness of this conservation program is clearly indicated by the fact that the total water supplied by the Board of Water Supply from 1927 to 1934 inclusive showed a continuous decrease irrespective of the fact that the population of Honolulu increased by 34,000 persons or 28 per cent dur-

ing this period. Following the low point of the artesian level of 23.5 feet above sea level in 1926 in the Beretania area, the water level eventually reached a peak of 33.3 feet above sea level in 1938. Beginning in 1935, the consumption of water reversed its seven-year trend and showed small yearly increases until 1939 when marked increases took place with the advent of military defense work. By 1944 the pumpage by the Board of Water Supply from the artesian areas within the Honolulu District had doubled the average for the decade 1930-39 and the artesian water levels of the Beretania area were again receding, reaching an all-time low of 22.1 feet above sea level in 1946.

For many years it has been apparent that the increasing demands of the growing City of Honolulu coupled with cycles of years of less than average rainfall and uncontrolled development and use of the artesian water supply, would eventually cause serious depletion of the ground water. The Board of Water Supply with this knowledge and background in mind, wisely foresaw the need of a study of water rights in Hawaii as the basis for subsequent legislation and other possible action that might be taken towards conserving these vital resources by the control and regulation of ground waters. In 1939 Mr. Philip M. Glick, Chief of the Land Policy Division, Office of the Solicitor, United States Department of Agriculture, was first contacted about the possibilities of such a study. Mr. Glick's friendly and sympathetic understanding of the problem encouraged further negotiations which subsequently resulted in an agreement between that Department and the Board of Water Supply of the City and County of Honolulu for a cooperative study of Hawaiian water rights. Fortunately, it was possible to secure the services for this study of Mr. Wells A. Hutchins, Senior Irrigation Economist, Division of Irrigation, Soil Conservation Service, United States Department of Agriculture. Mr. Hutchins, who has been a recognized authority on water rights for many years, is the author of a report covering a similar field entitled "Selected Problems in the Law of Water Rights in the West."

Mr. Hutchins visited Hawaii for a month during 1940 at which time he was able to study at first hand the physical and economic factors relating to water law in Hawaii and to hold conferences with many persons particularly informed on this subject. After returning to the mainland, he spent many additional months in detailed studies of court decisions and statutes before finally compiling the necessary data and writing the report.

This comprehensive study and resulting report of the Hawaiian system of water rights, completed after some seven years, is considered a valuable contribution to this particular field of research. It should be helpful to us here in Hawaii in formulating the necessary statutes for the control and orderly development of ground waters in the Honolulu-Pearl Harbor area. The Board of Water Supply is grateful to Mr. Hutchins for his painstaking study of this subject and his excellent presentation herewith, and takes considerable pleasure in making this report available in printed form.

FREDERICK OHRT
Manager and Chief Engineer

December 12, 1946

DEPARTMENT OF AGRICULTURE
WASHINGTON

July 3, 1945

Mr. Frederick Ohrt
Manager and Chief Engineer
Honolulu Board of Water Supply
P. O. Box 3410
Honolulu, Hawaii

Dear Mr. Ohrt:

In accordance with the cooperative agreement between the Board of Water Supply, City and County of Honolulu, Territory of Hawaii, and the United States of America by the Acting Secretary of Agriculture, dated November 18, 1939, a copy of the report of Mr. Wells A. Hutchins of the Soil Conservation Service, entitled "The Hawaiian System of Water Rights: Legal and Economic Aspects" is being transmitted to you herewith.

Because of your desire for immediate access to this document, review by the Solicitor's office or the other interested Bureaus of the Department has not been possible. Hence, the legal and economic conclusions expressed are those of Mr. Hutchins and do not represent the official views of this Department.

Very truly yours,

(S) CHARLES F. BRANNAN
Assistant Secretary

Enclosure

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

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FREDERICK OHRT

Manager and Chief Engineer

* Died July 7, 1946.

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Chapter 1

INTRODUCTION

The study of Hawaiian water laws and institutions upon which this report is based was made pursuant to a cooperative agreement between the United States Department of Agriculture and the Board of Water Supply, City and County of Honolulu. This assignment was an outgrowth of work that the writer had been doing with respect to Western water law, which has since resulted in the publication of "Selected Problems in the Law of Water Rights in the West."[1] The services of the writer, as stated in a letter to the Department of Agriculture from Frederick Ohrt, Manager of the Board of Water Supply, were desired "for the purpose of special research work in connection with the water law problem in the Territory of Hawaii along lines similar to the study he has been working on, and with possible special emphasis on the underground or artesian water supply and its control." This was to include necessary work on the ground. Under the cooperative agreement, the services of the writer were provided by the Department of Agriculture for the purpose of making the study and preparing the report thereon, and the expenses of his travel to and within the Islands and of subsistence were borne by the Board of Water Supply.

The writer accordingly spent 30 days in the Hawaiian Islands in the early spring of 1940—2 days on the Island of Maui and the remainder on the Island of Oahu. The larger part of that period was devoted to the physical and economic factors that relate to questions of water law under the conditions so peculiar to Hawaii. Considerable time was spent in the field in company with technicians of the Board of Water Supply and with engineers, geologists, plantation officers, agricultural workers, and others; and many conferences were held in Honolulu with attorneys, public officials, and technicians employed by the Federal and Territorial governments, the University of Hawaii, and private organizations. The detailed studies of the court decisions and statutes were made by the writer after returning to the mainland.

Immediate demands upon the writer's time for other purposes, and for protracted periods, have delayed the completion of the main report. However, a preliminary report upon the legal phases of the Honolulu ground-water situation, not for publication, was prepared during the latter part of 1940 for the use of the Board of Water Supply. Most of the matters covered by that preliminary report are included in amplified form in chapter 5 of the present report. The matters there presented, but not included herein because of the essentially research character of this study, were suggested constitutional methods of dealing with the ground-water problem of the Honolulu District under the correlative doctrine.

This report contains introductory chapters concerning some features of the Territory of Hawaii and on the Hawaiian system of land titles, intended primarily to give "mainland" readers not familiar with the Territory a background for the discussion of Hawaiian water laws. The physical features of the Islands, the highly specialized agriculture and its relation to the economy of the Territory, and the peculiar system of

[1] U. S. Dept. Agr., Misc. Pub. No. 418, 513 pp. (1942).

land titles, are all intimately related to questions of water rights, and it is believed that an understanding of these interrelationships is necessary to an adequate comprehension of the water-law problem.

The presentation of Hawaiian water law itself is made in three chapters which deal, respectively, with rights to the use of surface waters, rights to the use of ground waters, and other topics in the law of waters. The ground-water chapter includes a statement of the physical factors involved, compiled from local authoritative sources. This is being done because these physical conditions differ markedly in many respects from those that prevail on the mainland, and because the Board of Water Supply desired that special emphasis be placed upon the artesian water supply and its control. As a feature of artesian-well control, the concluding chapter outlines some of the aspects of management of the Honolulu water supply, which depends so largely upon the effective maintenance of the artesian-water source. The appendix contains lists of all of the statutes and court decisions that are cited in the report.

The study here presented is primarily factual and does not purport to recommend specific changes in Hawaiian water law. The basic system of water rights in the Islands is the outgrowth of customs which have been followed from time immemorial; it appears to be, in general, a workable system for its environment, and the analysis of its many features is presented herein with comparatively little critical comment. In the writer's opinion the two features of existing water law in Hawaii that cannot be adequately discussed without criticism, are the riparian doctrine with respect to surface waters and the correlative doctrine with respect to ground waters, both of which have been borrowed by the Supreme Court of Hawaii from other jurisdictions; and the criticisms here offered are based upon observation of the application of those doctrines in the Western States. The critical comments are embodied in separate sections, in order to keep them apart from the factual presentations of these two doctrines as laid down by the supreme court.

Acknowledgment is due to many persons and organizations for valued assistance in making this study, for giving generously of their time, and for making records available. Appreciation is expressed particularly to the manager, members, and employees of the Honolulu Board of Water Supply, who went far beyond the letter of the cooperative agreement in placing the resources of the Board at the writer's disposal and in making possible the success of this undertaking. Not the least valuable part of the cooperation afforded by local parties was the loan to the writer, for use throughout the period of preparation of the report, of a large number of books, reports, documents, manuscripts, and maps, some of which were the property of the Board of Water Supply and others were borrowed for the purpose from Honolulu attorneys. Included in the legal literature thus made available were the Revised Laws of Hawaii, the Hawaii Digest, and an almost complete set of the Hawaii Reports.

Because of the need of the Board of Water Supply for the immediate use of this report, it has not received the usual review by the Solicitor's Office and the various Bureaus of the Department given to reports of cooperative studies. Hence the legal and economic conclusions expressed are those of the author and are not the official views of the Department of Agriculture.

Chapter 2

SOME FEATURES OF THE TERRITORY OF HAWAII

Important Physical Characteristics

Composition of the Territory

The Territory of Hawaii comprises the 8 chief islands of the Hawaiian Archipelago in the Pacific Ocean, the names and locations of which are shown on the frontispiece, and a number of small islands.[1]

Honolulu, the Territorial capital, on the Island of Oahu, is 2,089 miles west-southwest of San Francisco.

Some Geographical Features

The islands of this archipelago are the summit parts of a 2,000-mile range of volcanic islands.[2] Considering only the 8 principal islands shown on the frontispiece, the distance from the westernmost portion of Niihau to the easternmost portion of Hawaii is less than 400 miles. The distances intervening between neighboring islands in this group range from approximately 7 miles between Maui and Kahoolawe to approximately 73 miles separating Oahu and Kauai. Oahu and Molokai are about 26 miles apart and Maui and Hawaii about 29.

The areas and dimensions of the 8 chief islands are given in table 1. In the article from which this table is taken, Dr. Wentworth calls attention to the fact that the largest island, Hawaii, is about one-fifth smaller than

Table 1.—*Dimensions and areas of the 8 chief islands*

Island	Extreme Length Miles	Width[a] Miles	Area[b]	
			Square Miles	Acres
Hawaii	93	76	4,030	2,579,200
Maui	48	26	728	465,900
Oahu	44	30	604	386,600
Kauai	33	25	555	355,200
Molokai	38	10	260	166,400
Lanai	18	13	141	90,200
Niihau	18	6	72	47,100
Kahoolawe	11	6	45	28,800
Totals			6,435	4,119,400

[a] Widths have been measured at the widest part, approximately transverse to the longest line, taken as the length.

[b] Area in acres based on the area in square miles, rounded to nearest 100 acres; area in square miles based on planimeter measurements by U. S. Geological Survey.

Source: Wentworth, Chester K., op. cit. (footnote 2). This table and its explanatory footnotes are taken directly from Dr. Wentworth's article.

[1] The names of the islands within the Territory are given in Rev. Laws Haw. 1945, p. 21, annotation to Organic Act, sec. 2. Various outlying islands in the archipelago are not included.

[2] Wentworth, Chester K., Geologic Engineer, Board of Water Supply, "Geographic Background: Physical Geography and Geology," First Progress Report, Territorial Planning Board of Hawaii (1939), p. 13.

the State of Connecticut, and that the Territory as a whole is about one-third larger than that State. According to the same authority (at p. 14) nearly half the area of the Territory lies within 5 miles of the coast, and only about 5 percent, on the Island of Hawaii, is more than 20 miles inland; the most remote points from the coast being as follows:

	Miles
Hawaii	28.5
Kauai	10.8
Maui	10.6
Oahu	10.6
Lanai	5.2
Molokai	3.9
Niihau	2.4
Kahoolawe	2.4

Topography and Soils

The Hawaiian Islands are largely mountain masses rising out of the ocean—the tops of much greater masses which comprise the base of the archipelago lying on the main ocean floor. Thus the archipelago is a range of volcanic mountains some 2,000 miles in length, the larger part of which is submerged. Even so, two of the peaks rise to heights nearly 14,000 feet above sea level. The present topography of the Islands has resulted from their volcanic origin—the building up of successive lava masses some parts of which eventually emerged from the sea—and from subsequent wave erosion and the stream erosion and weathering of protruded portions.[3] The present volcanic rock structure is highly important in its influence upon the occurrence and availability of ground water, and the structure of Oahu will be discussed briefly in that connection later. (See ch. 5, p. 154 and following.)

Topographic Features

Wentworth has summarized the general configuration of the Islands as follows:[4]

> The eight chief Islands consist of single or multiple volcanic domes, one to nearly fourteen thousand feet above present sea level. Some are but little dissected, others deeply dissected or in part cut away by the sea. The larger valleys are profound canyons, with steep side and head walls which often give way abruptly at their upper margins to but slightly modified surfaces of the original dome. Even the most maturely dissected of the Islands retain remnants of the constructional forms. In weathering of the rocks and degree of dissection, parts of domes of similar age show profound contrasts in short distances due to local variations in rainfall and vegetation conditions. In places, a journey of 10 to 15 miles takes one from tropical rain forest to semi-desert, owing to the remarkable orographic control of rainfall.
>
> Much of the coast-line is regular and gently curved to the form of the volcanic domes. Many of these contour coasts are slightly eroded by the sea, showing cliffs 50 to 100 feet high, or are flanked by narrow coastal plains and sand beaches. Only the coast of Oahu might be regarded as complex, marked by numerous secondary volcanic craters and the product of a somewhat complicated coastal evolution. Coasts of north-west Kauai, eastern Niihau, northern Molokai, parts of Maui and the Waipio section of

[3] For a geologic account of the origin and development of Oahu and its relation to the other islands, see Stearns, Norah D., "An Island Is Born," 115 pp., illus., Honolulu (1935).

[4] Wentworth, C. K., op. cit. (footnote 2), pp. 14-18.

> Hawaii, with a few limited places on Oahu, Lanai and Kahoolawe, are eroded to sea cliffs several hundred to two or three thousand feet in height. Such cliffs, while in limited areas showing practical verticality, have overall slopes of 60 to 75 degrees. All the longer sea cliffs are broken by profound valleys, whose side walls often are as steep as the sea cliffs.***

Coulter[5] states further:

> Between the cones on the island of Hawaii are high plains or plateaus. Western Kauai is plateau-like in character, and so is central Oahu. Western Molokai and central Maui are extensive plains. A broad coastal plain stretches along the southern shore of Oahu. Other islands also have coastal plains. The plateaus, plains, and lower slopes of the Islands, though a comparatively small part of the total area, are the most important agricultural lands in the Territory.

A striking feature of several of the islands, referred to by Dr. Coulter, is the existence of two separate mountain masses with an intervening relatively low, broad area extending across the island. This is particularly the case with Oahu, Molokai, and Maui.[6] Hawaii exhibits the same general feature, except that the gap between the two highest mountain masses ascends to a comparatively high elevation (6,650 feet, or nearly half the height of the two flanking summits), and in contrast with the main saddles on the other 3 islands named, becomes relatively more constricted as it rises. The other larger islands consist principally of single mountain masses; Niihau, however, having a coastal plain of comparatively large area. A feature of Kauai is the presence of extensive swamp areas at high elevations near the center of the island.

Accounts of the origin of the Island of Oahu indicate that the low broad saddle—Schofield Plateau—which intervenes between the Waianae Range on the west and Koolau Range on the east, is the product of lava flows which filled in the ocean space between two originally separate volcanic islands.[7] These two neighboring islands were built from separate submarine volcanoes—the Waianae and the Koolau. The order of appearance of the two volcanoes is conjectural, but the Waianae was the first to become extinct. Flows from the Koolau continued and eventually filled the ocean space between the two islands; thus Schofield Plateau resulted from the banking of the Koolau flows against the Waianae Range, in which volcanic activity had ceased and which was undergoing stream erosion. Various submergences and re-emergences of the land took place later, the mouths of the streams as they existed at one period being today about 1,800 feet below sea level; the most important result of the shifts in sea level being the deep drowning of the great valleys and their subsequent sedimentation.

Important agricultural developments under irrigation are located on the lower elevations of the isthmus portions of both Oahu and Maui.

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[5] Coulter, John W., "Land Utilization in the Hawaiian Islands," University of Hawaii Research Publications No. 8 (1933), p. 15.

[6] The isthmus of Maui reaches an elevation of only 125 feet, whereas the summits of the mountain areas on each side are 5,788 and 10,025 feet, respectively. The isthmus of Molokai reaches 425 feet, between summits of 1,415 and 4,970 feet. Schofield Plateau, the saddle between the ranges on Oahu, reaches an elevation of 950 feet, while the mountain ranges have respective summits of 3,150 and 4,025 feet. For further details of chief summits and saddle elevations, see Wentworth, C. K., op. cit. (footnote 2), p. 14, from which these figures are taken.

[7] The statement in this paragraph of the origin of Oahu is based upon a detailed account by Dr. Harold T. Stearns, U. S. Geological Survey, in "Geology and Ground-Water Resources of the Island of Oahu, Hawaii" (Stearns, H. T. and Vaksvik, K. N.), Terr. Haw. Dept. Pub. Lands, Div. Hydrography, Bul. 1 (1935), pp. 174-179, and a more popular version by the same author in "Geologic Map and Guide of Oahu, Hawaii," Terr. Haw. Dept. Pub. Lands, Div. Hydrography, Bul. 2 (1939), pp. 8-10. See also Stearns, N. D., op. cit. (footnote 3).

Soils and Soil Erosion[8]

The soils are principally of volcanic origin, with limited areas of marine sediments and coral formations. As volcanic activity still prevails in some localities and ceased at varying times in others, and as erosion and weathering have taken place under variable conditions of rainfall and temperature, all stages of soil formation and development are to be found. The soils are characterized by a high percentage of iron and aluminum oxides, and they generally are friable and exceptionally porous and permeable to air and water.

The problem of soil erosion is less serious and widespread than on the mainland, owing to the geologic youth of the Islands and the characteristic soil development. The most serious losses from wind and water are observable on the lee sides of the islands on fields left fallow or otherwise exposed to erosion, on overgrazed and poorly managed pastures, and on forest land overgrazed by wild sheep and goats and thus stripped of its vegetative cover.

Climate[9]

The outstanding features of the climate of the Territory are:

(1) Remarkable differences in rainfall over adjacent areas.

(2) Tenaciousness of the trade winds through practically all seasons. However, southwesterly winds are dominant in the Kona districts of Hawaii and in a limited area to the leeward of Haleakala, Maui.

(3) Persistently equable temperature through the seasons.

Local influences complicate climatic conditions, particularly the distribution of rainfall.

Rainfall

The distribution of precipitation on the islands depends primarily upon the relation of their topography to the direction of the prevailing trade winds, which blow from a generally northeasterly direction. Interception of these moisture-laden winds by the high lands results in precipitation of a large proportion of their moisture, in the mountains and on the ascending windward slopes, at the expense of the leeward areas. Southerly or "Kona" storms sometimes bring heavy rains to otherwise normally dry areas.

In general, then, the windward areas—east and northeast slopes—are markedly wet, and the lowlands west and southwest of the mountains are at least moderately dry. All the four largest islands have areas in which the annual normal rainfall is 20 inches or less and have relatively large areas in which it is well over 200 inches.

As shown heretofore, much of the Territory is within a very few miles of the coast and none as much as 30 miles, yet the chief summits of the larger islands range principally from 3,000 or 4,000 to more than 13,000 feet above sea level; hence within a few miles there are often great

[8] Based upon statements by Coulter, J. W., op. cit. (footnote 5), p. 24; Foster, Zera C., Assistant Soil Surveyor, U. S. Dept. of Agriculture, "Soils of Hawaii," First Progress Report, Territorial Planning Board of Hawaii (1939), pp. 57-81; and Winters, N. E., Head Conservationist, Soil Conservation Service, U. S. Dept. of Agriculture, "Erosion Conditions in the Territory of Hawaii," First Progress Report, Territorial Planning Board of Hawaii (1939), pp. 81-82.

[9] Based principally upon a statement by Walter F. Feldwisch, Meteorologist in Charge, U. S. Weather Bureau, "Climate of the Hawaiian Islands," First Progress Report, Territorial Planning Board of Hawaii, pp. 110-125 (1939).

changes in elevation. It follows that marked changes in rainfall often occur within distances of a few miles. For example, the normal rainfall at certain points on Kauai near sea level is 19 inches, whereas near the summit of Waialeale at an elevation of 5,075 feet, 15 miles away, it exceeds 450 inches. At two points on west Maui 5 miles apart, the rainfall is 12 inches at an elevation of 50 feet and 382 inches at 5,788 feet; a similar comparison on east Maui at points 12 miles apart, shows 14 inches at 560 feet elevation and 282 inches at 2,900 feet. The wettest spot recorded on Oahu is Marsh in the Koolau Range, at an elevation of 2,600 feet, where the normal precipitation is 306 inches; 12 miles south at Puuloa, near Pearl Harbor, at 15 feet altitude, the normal is 20 inches. At Diamond Head in the Honolulu District, 70 feet elevation, the rainfall is 20 inches; and at Manoa Tunnel No. 2, 5 miles north on the lee side of the range, at altitude 650 feet, the normal is 150 inches. Within the next mile beyond the tunnel the altitude ascends rapidly to the crest of the range, but at two stations at or near the crest and both within two miles of the tunnel, the rainfall is considerably less—73 inches at Olympus, altitude 2,500 feet, and 102 inches at Konahuanui, the highest peak in the range, at elevation 3,104 feet.

The zone of maximum rainfall on windward east Maui and windward Hawaii may be at around 2,500 feet, but on west Maui and Kauai the precipitation apparently increases with elevation to the summits at about 5,000 feet. On Oahu the heaviest precipitation is in the Koolau Range at the crest or slightly to the leeward, the windward areas near sea level having about twice as much as corresponding areas to the leeward. The Waianae Range on Oahu also raises the quantity of precipitation received. The Waianae, however, lies to the leeward of the Koolau Range and is smaller in area; consequently it receives much less rain than does the Koolau, which effectively strips the trade winds of much of their moisture before they reach the Waianae Mountains.

At a given station, the monthly rainfall may vary greatly over a period of years. For the Islands as a whole, considerably more rain falls from November to April than from May to October. The Kona region of Hawaii is an exception; there, where southwesterly winds predominate, more precipitation is recorded in the summer than in the winter.

The average number of days with measurable rainfall during the year is least on the leeward lowlands and greatest on windward slopes or in the uplands. Available records show the minima on the larger islands as ranging from 18 to 48 days, and the maxima 271 to 330 days. At some points for which daily records are not available, the maximum number of days may exceed these figures.

Temperature

August and September are the warmest months and January and February the coolest. However, in an average year at an average station, there is less than 6.5 degrees difference between the warmest and the coolest month. Elevation is the major controlling factor in the average temperature; and the decrease in temperature for at least the first 1,000 feet is somewhat greater than might be expected. Generally speaking, the higher temperatures and the greater daily range from day to night are on the leeward sides of the islands.

The highest temperature officially recorded is 100 degrees, at Pahala, Hawaii, elevation 850 feet, April 27, 1931; lowest, 25 degrees at Humuula, Hawaii, elevation 6,685 feet, March 6, 1912.

Frost rarely forms below 4,000 feet and probably never below 2,500 feet. Snow frequently covers the higher levels of Mauna Loa and Mauna Kea, Hawaii, and Haleakala, Maui, during the winter months.

Windstorms

Local storms are occasionally accompanied by winds which cause damage to trees and other property. Severe windstorms, while not unknown, are rare.

Water Resources

Surface Water

According to Carson:[10]

> The porosity of the ground varies extremely from place to place even within short distances. Lava surfaces so new that they have not yet become appreciably weathered or covered with a mantle of soil, particularly aa lavas, are so porous that there is no surface run-off at all except during the most torrential downpours; while surfaces that are deeply weathered and compacted, on the steep bare slopes, shed very rapidly nearly all the rain that falls on them. Surfaces deeply weathered and mantled with soil and vegetation shed a high proportion of the rainfall, but retard its run-off, feeding it to the streams more slowly.
>
> The characteristic drainage areas of the Territory are short; extending from the crests of the mountains to the sea in narrow closely-spaced strips and are very steep.
>
> On Molokai, Maui, and Hawaii all the streams of importance are on the windward slopes, while on Kauai and Oahu some of the best streams are fed by rains that fall to leeward of the crests of the mountains and that flow into the sea on the lee side of the Islands.
>
> No perennial streams of any appreciable size are known on any of the other Islands.

In the same article is presented (at pp. 134-141) a series of curves showing characteristic duration-discharges and the intensity-frequency of floods in selected areas. These curves show that the flows of the natural surface streams are highly variable, and they "illustrate, also, the remarkably high intensities that frequently occur on the small steep streams that are common in Hawaii."[11]

The characteristic variability of flow may be illustrated by three examples, in which the records were taken over approximately a quarter-century, discharges being expressed in million gallons daily unless otherwise noted:[12]

Kalihi Stream, Honolulu, at Kioi Pool; 25-year record: Average discharge 5.2 m.g.d. (8 sec. ft.), minimum 0.06, maximum daily (24-hour) 297, and maximum flood peak 10,900 (16,900 sec. ft.). The total annual

[10] Carson, Max H., District Engineer, U. S. Geol. Survey, in cooperation with Haw. Div. of Hydrography, "Surface-Water Resources," First Progress Report, Territorial Planning Board of Hawaii, pp. 125-126 (1939). The Territorial Planning Board has also compiled a comprehensive summary entitled "Surface Water Resources of the Territory of Hawaii, 1901-1938," 411 pp. (1939).

[11] Carson, M. H., op. cit. (footnote 10), p. 128.

[12] Data from Territorial Planning Board's summary of "Surface-Water Resources," op. cit. (footnote 10), pp. 18, 154, and 222.

The terms second-foot and acre-foot are seldom used in the Islands, even for stream flow. The rate of flow of water is customarily expressed in million gallons daily, and the volume in million gallons. A flow of one million gallons per day is approximately 1.55 second-feet, and one million gallons in volume is approximately 3.07 acre-feet.

run-off ranged from 724 million gallons in 1926 to 3,790 in 1927, or from about 2,200 to 11,600 acre-feet.

Honokohau Stream, Maui, above intake of Honokohau Ditch; 23-year record: Average discharge 27.4 m.g.d. (42 sec. ft.), minimum 6.2, maximum daily (24-hour) 505, and maximum flood peak 2,200 (3,400 sec. ft.). The total annual run-off ranged from 6,130 million gallons in 1917 to 15,200 for 356 days in 1916, or from about 18,800 to 46,700 acre-feet.

South Fork of Wailua River, Kauai, one-third mile above Wailua Falls; 26-year record: Average discharge 86 m.g.d. (133 sec. ft.), minimum 1.2, maximum daily (24-hour) 8,900, maximum flood peak 29,000 (45,000 sec. ft.). The total annual run-off ranged from 6,500 million gallons in 1926 to 59,100 in 1916, or from about 20,000 to 181,400 acre-feet.

The foregoing examples were selected solely to illustrate the variability of flow as shown by several long records, and the streams in question are not represented as being otherwise typical of those on any particular island.

Ground Water

Stearns[13] has summarized the occurrence of ground water in the Islands as follows:

> All the occurrences of ground-water in the Territory fall into two divisions: 1. Basal ground-water, and, 2. High-level ground-water.
>
> BASAL WATER.—Basal water is the great body of fresh water that lies below the main water table of the Islands. It is found chiefly in the main volcanic masses of the Islands outside of the rift zones and in the limestone, gravel, and other permeable rocks that form the coastal plains. This water floats upon salt water due to its lesser specific gravity and obeys the Ghyben-Herzberg principle. According to this principle, for each foot the water stands in a well above sea level, salt water lies about 40 feet below sea level. Thus, if the water in a well stands 10 feet above sea level, the depth to salt water will be about 400 feet below sea level. Because there is a zone in which the fresh water and salt water are mixed, the maximum depth at which potable water can be obtained is somewhat less than the calculated amount.
>
> Along parts of the coasts of Oahu and Kauai a sedimentary caprock confines the basal water in the lava rock under pressure, and wells drilled through the caprock encounter artesian water.
>
> HIGH-LEVEL WATER.—The four types of high-level water are: 1. Water confined by intrusive rocks, chiefly dike complexes; 2. Water perched on ash or tuff beds; 3. Water perched on soil beds, and 4. Water perched on alluvium. The largest bodies of water are those confined in the dike complexes associated with the rift zones. The next largest supplies are recovered from perennial stream valleys that have been buried by lava flows. Small but useful supplies are also obtained from ash and soil beds interstratified with lava flows.

According to the same authority (at pp. 145-147), the total draft upon ground-water supplies from wells approximated, for the Territory, 130,000 millions of gallons in 1920 and 152,000 in 1937. This was at the rate of 356 million gallons daily (552 second-feet) in 1920 and 416 m.g.d. (645 second-feet) in 1937. In the latter year about 66 percent of the total draft was on Oahu and about 29 percent on Maui, most of the re-

[13] Stearns, Harold T., Geologist, U. S. Geol. Surv., in charge Hawaiian Ground-water Investigations, "Ground-Water Resources," First Progress Report, Territorial Planning Board of Hawaii, p. 142.

maining 5 percent being on Kauai and Hawaii, with comparatively small drafts on Lanai and Molokai. The use of well water is said to be rapidly increasing in the Islands. In addition to wells, the derivation in 1937 of about 28,000 million gallons of high-level ground water from tunnels is also shown, of which 51 percent was on Oahu, about 27 percent on Maui, and nearly 21 percent on Hawaii, with small quantities on Kauai, Lanai, and Molokai. This represented a withdrawal from tunnels of nearly 77 million gallons daily, or about 119 second-feet.

Dr. Stearns states further (at p. 147) that "Large supplies of ground-water await development on Oahu, Kauai, Maui, Molokai, and Hawaii."

The question of ground water will be discussed further in the latter part of this report in connection with rights to the use of such water. (See ch. 5.)

Historical Background[14]

The Hawaiians belong to the Polynesian family, the Islands having been peopled with immigrants who are believed to have come in successive stages, hundreds of years ago, from other Pacific islands almost certainly including Tahiti. For several centuries prior to 1778, when Captain James Cook of the British navy visited the Islands, the natives lived in almost complete isolation from the rest of the world.[15]

The ancient Hawaiian civilization contained a highly cultivated upper class of chiefs and priests, and an underprivileged lower class who lived on the land and produced all the necessities of life for all classes. While the ruling chief generally had absolute authority, there was a fairly large body of customs relating to property matters such as water rights, fishing rights, and land usage, which ordinarily had the force of law. Taro (kalo) was the most important food staple, the wet-land variety being produced under irrigation in terraced ponds to which water was brought in ditch systems of intricate pattern. The ancient taro water rights are of outstanding importance in the present water law of Hawaii. Several other crops also were cultivated. Fish and sea foods had a place in the diet nearly equal to that of taro; fishing as well as farming was therefore one of the leading occupations, and the Hawaiians were very skillful navigators. Other principal occupations included house building, canoe building, and bird catching. There was an extensive unwritten literature of song and story; recreation was found in dancing, sports, and games.

The Hawaiian Kingdom was consolidated and founded by Kamehameha I, a man of outstanding personality and leadership both in peace and war, who at the time of Captain Cook's visit was a high chief in one of the four existing kingdoms. Theretofore the archipelago had been divided into petty kingdoms which shifted in scope as the result of rivalries and wars, each one including at various times a single island, two or more islands, or only part of an island. By virtue of conquest Kamehameha became king of the Island of Hawaii, after which in 1795

[14] Based principally upon Kuykendall, Ralph S., "The Hawaiian Kingdom, 1778-1854," 453 pp., illus., University of Hawaii, Honolulu (1938); and Snell, John, Executive Secretary, Terr. Equal Rights Commission, "Historic Background," First Progress Report, Territorial Planning Board of Hawaii, pp. 4-12 (1939).

[15] According to Snell, J., op. cit. (footnote 14), p. 4, it is held by some historians that Spanish ships visited the archipelago as early as the 1555 journey of Juan Gaetano, but the existence of the Islands was not made known definitely to the rest of the world until the visit of Captain Cook.

he subdued Maui and Molokai and then invaded and conquered Oahu. The King of Kauai, after extensive negotiations in which foreign traders played an important part in order to avert further warfare, in 1810 acknowledged Kamehameha as sovereign, which completed the consolidation of the Hawaiian Kingdom. That Kamehameha was an able statesman and diplomat, as well as warrior, is evidenced by his handling of relations with his chieftains and with the foreigners who were coming to be a factor in the island political and commercial life.

The land question was closely associated with the government of the kingdom, as it had been in the preceding petty states. Because of its bearing upon water rights past and present the Hawaiian system of land titles is treated in a separate chapter in this report.

The monarchy thus founded by the first Kamehameha persisted for nearly a century until its overthrow in 1893.[16] Following an intervening provisional government, a republic was established in 1894[17] and ended with the installation of a Territorial government in 1900 after annexation of the Islands to the United States.

Among the important developments during the century following the conquest of Oahu may be cited the growth of commerce; abolition of the kapu system[18] and of idolatry, and the introduction of Christianity and modern education; installation of new industries and public utilities, and notably the growth of large-scale agriculture; governmental reorganization and political enfranchisement of the people; division of lands between the king, the chiefs, and the people; and friendly relations with foreign governments, culminating with the treaty of annexation.

Territorial Status

The Territory of Hawaii was annexed to the United States in 1898. The treaty between the Republic of Hawaii and the United States, providing for annexation, was concluded June 16, 1897. The Resolution of the Senate of Hawaii ratifying the treaty was adopted September 9, 1897, and the Joint Resolution of Congress to provide for annexation was approved July 7, 1898. The transfer of sovereignty was effective August 12, 1898. The Organic Act, passed by Congress to provide a government for the Territory of Hawaii, was approved April 30, 1900 and went into effect June 14, 1900.[19]

The Organic Act[20] provides for the repeal of the constitution of the Republic of Hawaii[21] and of certain parts of the laws of the republic

[16] One of the main reasons for the overthrow of the monarchy was the determination of the queen to promulgate a new constitution which would restore some of the former powers of the monarch. See Snell, J., op. cit. (footnote 14), p. 8.

[17] An insurrection intended to overthrow the republic and restore the monarchy broke out early in January 1895 and was put down within 1 to 2 weeks. A brief history of this insurrection is given in *In re Kalanianaole*, 10 Haw. 29, 44-45 (1895).

[18] The kapu (taboo) system was part of the ancient religion. Its effect was to impose a set of prohibitory or restrictive rules upon the daily life of those of the different classes of society. The word is now frequently observable, together with the words "Keep out," on signs forbidding admission to enclosed properties.

[19] Rev. Laws Haw. 1945 contains these acts as follows: Resolution of the Senate of the Republic of Hawaii ratifying the treaty of annexation, and setting out the treaty "word for word," p. 20; Joint Resolution of Congress to provide for annexation and repeating the substantive provisions of the treaty (30 Stat. L. 750), pp. 18-19; Hawaiian Organic Act (31 Stat. L. 141, ch. 339), with amendments, pp. 21-57.

[20] In this and following paragraphs of the discussion of "Territorial Status," the sections noted in parentheses are sections of the Organic Act as amended.

[21] The constitution of the Republic of Hawaii, adopted July 3, 1894, is printed in Constitution and Laws of the Republic, 1894-5, pp. 75-123; in 9 Haw. 732-775; and in Civil Laws 1897, pp. 1-50.

(sec. 7); and provides further, that the laws of Hawaii not inconsistent with the Constitution or laws of the United States or the provisions of the Organic Act shall continue in force, subject to repeal or amendment by the legislature or by Congress (sec. 6; see also sec. 83).

The Territorial legislature consists of an elective senate of 15 members holding office for 4 years (sec. 30), and a house of representatives of 30 members elected every second year (sec. 35). The governor is appointed by the President for a term of 4 years, subject to removal by the President (sec. 66). The supreme court of the Territory consists of a chief justice and 2 associate justices, appointed by the President and subject to removal by him (sec. 82).

A United States district court is provided for, from which appeals lie to the circuit court of appeals of the ninth judicial circuit and to the United States Supreme Court in the same manner and under the same circumstances that govern Federal court appeals generally. The 2 judges of this court are appointed by the President for terms of 6 years and are subject to removal by him (sec. 86).

All of the foregoing Presidential appointments are made by and with the advice and consent of the Senate.

A Territorial Delegate to the House of Representatives, elected by the voters qualified to vote for members of the Territorial house of representatives, is provided for (sec. 85).

The legislature is authorized to create counties and town and city municipalities and to provide for their government (sec. 56).

The powers of the legislature specifically enumerated in section 55 of the Organic Act include the power to provide by general act for the incorporation of agricultural enterprises, and of organizations for the construction and operation of irrigating ditches and the colonization and improvement of lands in connection therewith. It is provided in the same section that the legislature may provide by general act for the condemnation of property for public uses, including the condemnation of rights of way for the transmission of water for irrigation and other purposes.

Governmental Subdivisions

The legislature has divided the Territory into counties, including one city and county. There are no separate town or city municipal governments.

The counties have no power to levy taxes, that function being reserved to the Territorial legislature. The county functions include generally the exercise of police powers, the protection of life, health, and property, and the construction, maintenance, and regulation of the use of public improvements.

City and County of Honolulu

The City and County of Honolulu comprises the Island of Oahu and all other islands in the Territory not included in any county.[22] The expression "City of Honolulu" is descriptive only; to distinguish urban and rural com-

[22] Rev. Laws Haw. 1945, sec. 6501.

munities, it means the area known as "Honolulu District" extending primarily from Maunalua to Moanalua, inclusive.[23]

The legislative power of the city and county is vested in a board of supervisors having 7 members. The mayor is the chief executive officer, and is the presiding officer of the board.[24]

Control of the water system that serves the Honolulu District (the city proper) is vested in a Board of Water Supply of 7 members, of whom 5 are appointed for 5-year terms by the mayor, with the approval of the board of supervisors, and 2 are the legal incumbents of the offices of Territorial superintendent of public works and of chief engineer of the city and county department of public works.[25] The board is also vested with the administration of an act relating to the control of artesian wells in the Honolulu District (see ch. 5, p. 200 and following, and ch. 7, pp. 230-232.

The board of supervisors of the city and county has general authority to establish and maintain water works, and it retained control of the rural water systems of Oahu after the Board of Water Supply was created; but an act passed in 1939 provided for the transfer of the rural water systems to the Board of Water Supply at such time as the supervisors deem it advisable to effectuate the transfer[26] (see ch. 7, p. 228).

Other Counties

There are 4 counties in addition to the City and County of Honolulu:[27]

Hawaii, comprising the Island of Hawaii, with the county seat at Hilo.

Maui, comprising the Islands of Maui, Molokai (excepting the portion known as the leper settlement), Lanai, and Kahoolawe. The county seat is at Wailuku on the Island of Maui.

Kauai, comprising the Islands of Kauai and Niihau, with the county seat at Lihue on Kauai.

Kalawao, comprising the leper settlement on the Island of Molokai.

The Counties of Hawaii, Maui, and Kauai are governed by boards of supervisors, the first two named having 7 members each and Kauai 5 members. The County of Kalawao is governed by the Territorial Board of Hospitals and Settlement.[28]

Population

The population of the Territory is reported as totaling 368,336 in 1930 and 423,330 in 1940—an increase of 14.9 percent over the 10-year period.

[23] Rev. Laws Haw. 1945, sec. 6502. See terminology in ch. 7, pp. 223-224, herein.

[24] Rev. Laws Haw. 1945, secs. 6505, 6506, 6508, 6572.

[25] See ch. 7, pp. 227-230, for statutory citations.

[26] Rev. Laws Haw. 1945, secs. 6083, 6101, 6521, subs. 16, 18, 19, 24. Transfer authorized: Sess. Laws 1939, Series B-85, Act 253 (Rev. Laws Haw. 1945, secs. 6863, 6864, note to sec. 6864).

[27] Rev. Laws Haw. 1945, sec. 6201.

[28] Rev. Laws Haw. 1945, secs. 2438, 6353, 6412, 6452.
General powers of counties concerning water works: Rev. Laws Haw. 1945, secs. 6083, 6101, 6202, subs. 3, 5. Hawaii: Rev. Laws Haw. 1945, secs. 6375, 6378. Kauai: Rev. Laws Haw. 1945, secs. 6421-6428. Maui: Rev. Laws Haw. 1945, secs. 6455, 6464. See ch. 4, p. 47, footnote 4, for statutes relating to water development on the Island of Molokai.

The accompanying table (table 2) shows the population for counties and islands from 1920 to 1940.

Table 2.—*Population, Territory of Hawaii, 1920 to 1940*

County or Island	1940	1930	1920
Counties:			
Honolulu (City and County)	258,256	202,923	123,527
Hawaii	73,276	73,325	64,895
Maui	55,534	55,541	37,385
Kauai	35,818	35,942	29,438
Kalawao	446	605	667
Totals	423,330	368,336	255,912
Islands:			
Oahu	257,664	202,887	123,496
Hawaii	73,276	73,325	64,895
Maui	46,919	48,756	36,080
Kauai	35,636	35,806	29,247
Molokai	5,340	5,032	1,784
Lanai	3,720	2,356	185
Niihau	182	136	191
Palmyra	32	.....	.....
Kahoolawe	1	2	3
Outlying islands:[a]			
Midway	437	36	31
Johnston	69	.....	.....
Canton	40	.....	.....
Enderbury	4	.....	.....
Howland	4	.....	.....
Baker	3	.....	.....
Jarvis	3	.....	.....
Totals	423,330	368,336	255,912

[a] Not under the jurisdiction of the Territory; population in the county group included in City and County of Honolulu.

Source: U. S. Dept. Commerce, Bur. Census, Sixteenth Census of the United States, 1940, Population, Vol. I, Number of Inhabitants, Hawaii, pp. 1209-1214. Table 2, p. 1209, contains population of cities of 5,000 or more; Table 3, p. 1210, contains population of Territory, counties, and islands; Table 4, p. 1211, contains population of counties by minor civil divisions.

According to the same census report upon which table 2 is based, the population of the City of Honolulu—that is, the portion of Oahu comprising the Honolulu District, the city proper (see p. 13 above)—was 137,582 in 1930 and 179,326 in 1940. Thus Honolulu contained 37.4 percent of the total population of the Territory in 1930 and 42.4 percent in 1940.

The cities and towns in the Territory are not incorporated. The census report classifies those communities containing 5,000 or more as cities, 2,500 to 4,999 as towns, and fewer than 2,500 as villages. The number in each class reported in 1940 is as follows:

	Cities	Towns	Villages
Hawaii County	1	1	33
Honolulu City and County	3	3	12
Kauai County	..	3	13
Maui County	2	4	18
Totals	6	11	76

The populations reported in 1940 for the cities were:

Honolulu (Island of Oahu)	179,326
Hilo (Island of Hawaii)	23,353
Wailuku (Island of Maui)	7,319
Waipahu (Island of Oahu)	6,906
Wahiawa (Island of Oahu)	5,420
Lahaina (Island of Maui)	5,217

The largest population reported for any town on the Island of Kauai in 1940 was 4,254 for Lihue, the county seat.

Of the 76 villages in the Territory, 52 contained less than 1,000 population in 1940, and 15 contained between 1,000 and 1,500.

In 1930 the distribution of population of the Territory by racial origin showed the Japanese as 37.9 percent, Caucasian 21.8, and Filipino 17.1 percent. Hawaiian accounted for only 6.1 percent, Caucasian-Hawaiian 4.2, and Asiatic-Hawaiian 3.4, or a total of 13.7 percent Hawaiian and part-Hawaiian.[29] A local estimate for 1938 showed Japanese 37.31 percent, Caucasian 26, Filipino 12.83, and Hawaiian and part-Hawaiian 15.1.[30]

Agriculture

Coulter[31] states that:

> The Territory of Hawaii is a land of sugar cane and pineapples, corn and cotton, coffee, rice, and taro. Bananas, papayas, coconuts, mangoes, guavas, breadfruit, and other tropical fruits grow abundantly. Vegetables of both the subtropical and temperate zones are cultivated. Some land is used for grazing stock among which beef cattle and dairy animals are important. The breeding of horses and mules is carried on. Sheep and goats range high mountains; hogs and poultry thrive in farms on the lowlands. Thousands of acres of land are government and private forest reserves.

He also states that the soils of the Islands are a factor of less importance than climate in the utilization of the land.[32]

According to Vaksvik,[33] practically all land in the Territory now available for agriculture is used as such, although much of the plowable land still remains uncultivated. Further, there are large tracts on all the islands that cannot be cultivated on account of excessive rainfall, lack of sufficient rainfall or available irrigation water, thin soil, steepness of terrain, or high altitude, the greater portion of the grazing land being of this character. Large areas are in forest reserves and watersheds.

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[29] U. S. Dept. Commerce, Bur. Census, Fifteenth Census of the United States, 1930: Outlying Territories and Possessions, Hawaii, pp. 35-115.

[30] Kunesh, Joseph F., Director, Territorial Planning Board, "Population," First Progress Report, Territorial Planning Board of Hawaii (1939), p. 32.

[31] Coulter, John W., "Land Utilization in the Hawaiian Islands," University of Hawaii Research Publications No. 8 (1933), p. 27.

[32] Coulter, J. W., op. cit. (footnote 31), p. 24.

[33] Vaksvik, Knute N., Planning Engineer, Territorial Planning Board, "Land Utilization," First Progress Report, Territorial Planning Board of Hawaii (1939), p. 83.

Crops

The total cultivated area in 1930[34] aggregated 351,729 acres, or 8.5 percent of the total land area of the Islands. The cultivated area in that year is further subdivided as:

	Acres	Percent
Sugar cane	252,128	71.7
Pineapples	78,750	22.4
Other crops	20,851	5.9
Totals	351,729	100.0

One-half of the land area of the Islands in 1930 was in pasture and one-fourth in government and private forest reserves; the most important aspects of the forest being the conservation of water and the prevention of soil erosion.

Sugar cane is the principal cultivated crop on each of the four largest islands. This crop in 1930 occupied approximately 91 percent of the cultivated area of Hawaii, 86 percent of that on Kauai, 66 percent on Maui, and 52 percent on Oahu. The area in cane has decreased to some extent since 1930 and was approximately 240,000 acres in 1937.[35]

Pineapples in 1930 occupied about 42 percent of the cultivated land on Oahu, 29 percent on Maui, 11 percent on Kauai, and only 1 percent on Hawaii. On Lanai in that year the entire cultivated area was reported as in pineapples; on Molokai the pineapple area was 94 percent of the total. Chapman[36] states that while approximately 78,000 acres were devoted to pineapple production in 1930, this is evidently the gross area used by the plantations and not the acreage on which pineapples were actually growing. He states further that other sources have indicated a total of 90,000 acres in 1937 listed as pineapple-producing areas, but that the acreages reported for taxation as under production in that year aggregated 50,124 acres.[37]

Acreages in other major crops and in a large number of minor crops, fruits, nuts, and vegetables are reported for 1930. Of these the largest total is 5,498 acres in coffee, all on the Island of Hawaii.

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[34] Data presented herein for 1930 are taken from Coulter, J. W., op. cit. (footnote 31), pp. 50-53 and 100-104.

[35] Hawaiian Sugar Planters' Association, Genetics Department, Experiment Station, "An Acreage Census of Cane Varieties for the Crops of 1937 and 1938," Circ. 71 (1938), p. 6, reports the respective areas in sugar cane for 1932 to 1937, inclusive, as 246,813, 248,821, 246,777, 235,096, 239,167, and 239,043. The First Progress Report, Territorial Planning Board of Hawaii (1939), pp. 74-77, shows a total of 240,900 acres in sugar cane in 1937, distributed as follows: Hawaii 110,000, Kauai 47,000, Oahu 43,200, Maui 40,700.

[36] Chapman, Royal N., Director, Experiment Station, Pineapple Producers Cooperative Association, "Pineapples," First Progress Report, Territorial Planning Board of Hawaii (1939), p. 92.

[37] The First Progress Report, Territorial Planning Board of Hawaii (1939), shows on pp. 74-77 in connection with Land Use a total of 50,100 acres in pineapples in 1937, distributed as follows: Maui, Molokai, and Lanai 32,200 acres, Oahu 15,000 acres, Kauai 2,900 acres. No acreage was shown for that year on Hawaii.

Crops Grown Under Irrigation

About 36 percent of the cropped area of the Islands is under irrigation. This compares with 53 percent in California, 22 percent in Oregon, and 11 percent in Washington in 1929, and with 8 percent for the 19 Western States as a whole in that year.[38]

Sugar cane is by far the most important crop grown under irrigation, as well as the chief crop of the Islands, slightly over half of the cane area being irrigated. The area in other irrigated crops—principally taro and rice—is but little more than 1 percent of the total area irrigated. Wadsworth[39] notes several ventures in the irrigation of pineapples late in the nineteenth century, but states that the practice seems to have been short-lived. Present-day irrigation in Hawaii then is primarily the irrigation of sugar cane.

Sugar Cane

The production of sugar is of outstanding importance in the economy of the Territory. The principal industries are based upon agriculture, which has resulted largely from an absence of ores and other minerals; and the relative magnitude of agriculture as a whole and of sugar in particular in the industrial life of the Islands may be gaged from the fact that in the personal property tax returns for 1936 the taxpayers' valuations for agriculture aggregated almost 63 percent of the total of all business classifications—sugar being 47 percent, pineapples nearly 16 percent, and all other industries slightly more than 37 percent.[40] It is sometimes stated that a very slight difference in the price of a pound of sugar may determine the question of a prosperous year in the Islands.[41]

Most of the sugar cane is grown on large plantations which in 1938 employed an average of 46,400 persons with a total payroll of nearly $29,000,000 exclusive of perquisites; and about 101,400 persons, or nearly one-fourth of the total population of the Islands, lived on plantations during that year.[42]

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[38] Wadsworth, Harold A., "An Irrigation Census of Hawaii with Some Comparisons with Continental United States," Hawaiian Sugar Planters' Association (1935), p. 14. The percentage in Hawaii is distinctive in that it relates almost entirely to one crop—sugar cane (pp. 3-4). Accordingly it is principally a result of the proportion of cultivated land in sugar cane and the proportion of cane land under irrigation in the Islands.

[39] Wadsworth, Harold A., "A Historical Summary of Irrigation in Hawaii," The Hawaiian Planters' Record, Vol. XXXVII, No. 3 (1933), p. 148.

[40] Territorial Planning Board, in collaboration with John A. Hamilton, Manager, Chamber of Commerce of Honolulu, "Industry," First Progress Report, Territorial Planning Board of Hawaii (1939), p. 310.

[41] Note should be made of the fact, however, that one of Hawaii's major sources of revenue in normal peace times is its tourist business. In 1939 this was stated to rank third, with agriculture first and Army-Navy expenditures second: Armitage, George T., Executive Secretary, Hawaii Tourist Bureau, "Hawaii's Tourist Business," First Progress Report, Territorial Planning Board (1939), p. 315.

[42] Wightman, Chauncey B., Assistant Secretary, Hawaiian Sugar Planters' Association, "Sugar," First Progress Report, Territorial Planning Board of Hawaii (1939), p. 89. The general relationships between the plantations and the individual planters are summarized in this article, which appears on pp. 88-91 of the cited publication. A feature of interest in connection with the present report is the statement that there are relatively few individual planters adherent to irrigated plantations, owing in part to the cost of water development and in part to the fact that the irrigated plantation, having expended large sums per cultivated acre in water development and irrigation facilities, must operate its cane land under administration in order to obtain the yields and realize the operating economies which are necessary to justify the costs and which are possible only under direct administrative control. Further, while about 10 percent of the sugar is from cane grown on about 13 percent of the cane area, cultivated by more than 3,000 planters in more than 5,000 separate parcels, most of the large-scale producers operate sugar factories; and as factories and cane fields are so interdependent, the industry as a whole has become well integrated.

The production of cane and manufacture of sugar, then, being so vital to present-day Hawaiian industry, the importance of irrigation and consequently of water rights may be emphasized by reference to a few salient points:

(1) About one-half of the land that produces sugar cane is under irrigation, and the tonnage produced on the irrigated plantations of the Islands represents two-thirds or more of the total sugar crop.[43]

(2) Nearly 4,000 tons of water are required on an average to mature the cane for a ton of sugar.[44] Hence on many parts of the Islands, and in general except under the more favorable conditions of rainfall, temperature, and soil, other things being equal, irrigation is necessary to the profitable production of sugar cane. While irrigation is not the only factor in high yields, the irrigated cane lands produce considerably more on the whole than do the unirrigated cane lands.[45]

(3) The aggregate investments (undepreciated) in major irrigation works for the service of sugar-cane lands exceeded $39,000,000 in 1934—an average of $304 per acre.[46] This is considerably higher than the State average investments in irrigation works.[47]

Sugar cane was grown by the ancient Hawaiians,[48] but although widely distributed when first noted by the early travelers it apparently was not irrigated except where planted on the tops of embankments surrounding the irrigated taro patches.[49] Wadsworth[50] states that the year 1850 may be taken as the beginning of sugar irrigation and 1878 as marking the beginning of the modern period of water utilization. Sugar, however, had become an important article of export by 1840.[51]

From various sources of information[52] the present situation with respect to areas in cane under irrigation may be summarized as follows:

[43] Alexander, W. P., "The Irrigation of Sugar Cane in Hawaii," Hawaiian Sugar Planters' Association, Experiment Station (1923), p. 1.

[44] Coulter, J. W., op. cit. (footnote 31), p. 70; Alexander, W. P., op. cit. (footnote 43), p. 46.

[45] Wadsworth, H. A., "An Irrigation Census of Hawaii," op. cit. (footnote 38), p. 9, shows for 1933 an average yield of 2.98 tons of sugar per acre in cane on Hawaii, on which little of the land is irrigated; 4.35 tons per acre on Kauai, on which the largest part of the cane area is under irrigation; and 5.25 tons per acre on Maui and 5.92 on Oahu, where nearly all of the cane land is irrigated.

[46] Wadsworth, H. A., "An Irrigation Census of Hawaii," op. cit. (footnote 38), p. 11. The First Progress Report, Territorial Planning Board of Hawaii (1939), p. 129, gives the "Investment in ditches, wells, pumps and power" for the irrigation of sugar-cane plantations as $29,890,898.

[47] The highest average capital investment for any State in irrigation works, per acre which enterprises were capable of supplying with water, was $89 in 1930 and $99 in 1940, in each case for Arizona; and the average for the 19 Western States was $34.20 in 1930 and $37.50 in 1940: U. S. Dept. Commerce, Bureau of Census, Sixteenth Census of the United States: 1940, "Irrigation of Agricultural Lands," p. XXVIII. Wadsworth, H. A., "An Irrigation Census of Hawaii," op. cit. (footnote 38), p. 16, points out that all land in Hawaii capable of irrigation in 1933—that is, all land for which irrigation facilities were provided—was being then irrigated; in other words, the figure $304 represented the average investment per acre actually irrigated in Hawaii in 1933, as well as the average per acre which the plantations were capable of supplying with water. In each of the States, the average investment per acre actually irrigated in 1929 and 1939 was higher than the average investment based upon acreage which enterprises were capable of supplying with water, because much land for which water was available was not being irrigated; but it was still far below the Hawaii average for 1933. (For State irrigated acreages, see Sixteenth Census, 1940, Irrigation, p. XXVIII.)

[48] Kuykendall, R. S., op. cit. (footnote 14), p. 6.

[49] Wadsworth, H. A., "Historical Summary of Irrigation in Hawaii," op. cit. (footnote 39), pp. 125 and 132.

[50] Wadsworth, H. A., "Historical Summary, etc.," op. cit. (footnote 39), p. 124.

[51] Kuykendall, R. S., op. cit. (footnote 14), p. 315.

[52] The First Progress Report, Territorial Planning Board of Hawaii (1939), shows on p. 129 in connection with Water Resources a total of 130,803 acres of irrigated land in sugar cane in 1938, distributed as follows: Oahu 44,641, Kauai 38,384, Maui 37,125, Hawaii 10,653. Wadsworth, H. A., "An Irrigation Census of Hawaii," op. cit. (footnote 38), p. 11, reports a total of 128,373 acres of irrigated sugar cane in 1933, distributed as follows: Oahu 44,497, Kauai 40,052, Maui 38,525, Hawaii 5,299. See also Wadsworth, H. A., "Trends in Irrigation Practice," The Hawaiian Planters' Record, Vol. XLI, No. 4 (1937), p. 400.

The total area of irrigated cane lands in the Islands is approximately 130,000 acres, by far the greatest part of which is concentrated on three islands which are generally comparable in total irrigated acreages. That is, slightly more than one-third of the total irrigated area is on Oahu, whereas Kauai and Maui have somewhat less than one-third each. The balance of the area, consisting of only about 8 percent of the total, is on Hawaii.

Nearly all the land in cane on both Oahu and Maui is irrigated land. This is particularly the case on Oahu, where the proportion of unirrigated cane is negligible. On Maui the percentage unirrigated, though very small, is apparently somewhat higher than on Oahu. Kauai has important acreages in unirrigated cane, but the irrigated areas appear to be well over four-fifths of the total. Hawaii has more than twice as much land in cane as has any other single island, but only one-tenth or less of this area is under irrigation.

Taro (Kalo)

According to all accounts taro and sea foods constituted the staff of life of the ancient Hawaiians, and of these taro is rated as the more important. Apparently it has been grown in the Islands for many centuries;[53] certainly the wet-land (submerged culture) taro has been produced under irrigation on the valley bottom lands from time immemorial. The builders of the early irrigation diversion and distribution works displayed marked skill and resourcefulness in this branch of engineering. Equally noteworthy were those other accomplishments necessary to success in such undertakings—preparation of the land for irrigation, which required leveling and diking and in some cases difficult terracing operations; distribution of the irrigation water to the land, principally under methods of rotation of the available flow; application of the water to the land; and organization for the orderly distribution of water under the supervision of a lunawai or head watermaster appointed by the local chief.[54]

The probable area in taro necessary to supply the large early native population is considered to have covered many thousands of acres, of which the nonirrigated upland plantings were probably as important as those on the irrigated lowlands.[55] However, the native Hawaiian population has now dwindled to a small fraction of its former size and the area in taro has likewise greatly decreased. The area reported for the period July 1937 to June 1938 was 79 acres in upland taro and 1,154 acres in irrigated or "wetland" taro, being stated to have been during that year the most important truck crop grown in the Territory from the standpoints both of cash value and of number of pounds produced.[56]

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[53] Whitney, Leo D., Bowers, F. A. I., and Takahashi, M., "Taro Varieties in Hawaii," Hawaii Agr. Exp. Sta. Bul. 84 (1939), p. 6.

"Taro" and "kalo" are respectively the English and Hawaiian names of this plant. "Taro" is in more common usage in Hawaii at this time, but "kalo" seems to have been used more generally in the earlier court decisions on water rights. Throughout this report the two terms are used interchangeably.

[54] Features of this early irrigation are recounted by Wadsworth, H. A., "Historical Summary of Irrigation in Hawaii," op. cit. (footnote 39 herein), pp. 125-136.

[55] Whitney, L. D., et al., "Taro Varieties in Hawaii," op. cit. (footnote 53), p. 7. The First Progress Report, Territorial Planning Board of Hawaii (1939), "Minor Crops," in collaboration with H. H. Warner, Director Agricultural Extension Service, Univ. Hawaii, p. 96, states that it has been estimated that in the early part of the nineteenth century approximately 10,000 acres of taro were needed to supply the population of around 300,000 Hawaiians.

[56] Hanson, Kenneth I., and Frazier, Thomas O., "Hawaii Truck Crop Reporting Service," Univ. Hawaii Agricultural Extension Service, Extension Bul. 34 (1939), pp. 14 and 25.

The present importance of taro irrigation water rights is out of proportion to the very small percentage of all irrigated land in the Territory now represented by that crop. The rights of the small tracts (kuleanas) to the use of water were originally based primarily or wholly upon taro culture, and have received constant attention in the courts, as will be shown later in this report (see ch. 4). But changes in the purpose of use of the water, including changes in irrigated crops, have been upheld where the rights of others were not injuriously affected (see p. 139). Hence rights originally acquired for taro culture have since been used, in various instances, for rice or sugar cane, without impairment of their validity. The ancient kalo or taro water rights are vested rights of a high order.

Rice

The rice industry began about the middle of the nineteenth century when taro culture was on the wane, and increased in importance up to the first decade of the present century, but has since rapidly declined. Less than 1,300 acres in rice were reported for the Territory in 1937.[57] The rice area in 1938 decreased still further, and that reported for 1940 is 350 acres.[58]

Rice is essentially an irrigated crop, so that the rice area is a part of the total irrigated area of which it constitutes less than 1 percent. Apparently some of the early irrigated taro patches were converted into rice fields as the taro industry declined and rice became important. It is stated in a decision of the supreme court:[59]

> But previous to the culture of rice in this country, which is of only a few years' date, and the most active extension of it only since the operation of the Reciprocity Treaty in 1876, the area of taro culture had greatly diminished. There was not one-fourth of the population existing which once subsisted on taro. Land which had been in taro patches was left dry, used as pasture, and to a great extent had lost its characteristics as taro land. Witnesses sometimes speak of the same piece of land as taro or kula, according to its use at the time. It is in testimony in this case that a block of taro patches had been dried and used as a pasture, that is, as the witnesses express it, was kula. But now the value of such land for growing crops of rice has caused them to again claim all the water they were once entitled to. In the conversion to rice patches many of the old lines are obliterated. The kuaunas or taro patch banks are cut thin, and often cut away altogether, and the rice patches are extended over land which never had been planted in taro. * * *

[57] First Progress Report, Territorial Planning Board, in collaboration with Warner, H. H., "Minor Crops," op. cit. (footnote 55), p. 95.

[58] Letter to the writer from H. A. Wadsworth, Irrigation Engineer, Hawaii Agricultural Experiment Station, March 28, 1940.

[59] *Loo Chit Sam* v. *Wong Kim*, 5 Haw. 200, 201 (1884).

Chapter 3

THE HAWAIIAN SYSTEM OF LAND TITLES

The Hawaiian system of water rights, which so far as surface waters are concerned has no counterpart in any of the States, is intimately related to the system of land titles. The court decisions that involve water rights are replete with references to forms of land tenure and their peculiar origin. In no jurisdiction with which the writer is familiar is the determination of questions of water rights more dependent upon the history of combined land and water use than in Hawaii. It is therefore believed that the discussion of Hawaiian water law in this report will be materially clarified by bringing together in a separate chapter those features of land tenure that bear upon the exercise of water rights, including an outline of the origin and development of the system of land titles and a statement of some of the legal principles involved.

Original Tenure[1]

Under the ancient Hawaiian system all land belonged to the king, the ruling chief. The sovereign allotted tracts of land from time to time to the principal chiefs, subject to revocation at will, retaining the remainder under his immediate control.

> Each principal chief divided his lands anew, and gave them out to an inferior order of chiefs, or persons of rank, by whom they were subdivided again and again; after passing through the hands of four, five or six persons, from the King down to the lowest class of tenants. * * *[2]

All these allotments and sub-allotments were on the same revocable basis. All landholders except the king were therefore merely tenants on sufferance; the principal chiefs were tenants of the king, some chiefs were tenants of higher chiefs, and the common people were tenants of persons of rank immediately over them. The land reverted to the king upon the death of the holder and might or might not be reallotted to the heirs, changes often being numerous on the death of one of the landlords. Dispossession during the life of a holder might or might not take place without real provocation, but the superior unquestionably had the power to dispossess at pleasure his inferior.[3] Subject to this power, all persons from the king down were con-

[1] Based principally upon Kuykendall, Ralph S., "The Hawaiian Kingdom, 1778-1854," 453 pp., illus., Honolulu (1938), mainly chapter XV, "The Land Revolution"; King, Robert D., Principal Cadastral Engineer, Territory of Hawaii, "Hawaiian Land Titles," First Progress Report, Territorial Planning Board of Hawaii (1939), pp. 41-45; Thurston, Lorrin A., "The Fundamental Law of Hawaii," 428 pp., Honolulu (1904); and "Principles Adopted by Land Commission," Laws Haw. 1847, pp. 81-94; Rev. Laws Haw. 1925, Vol. II, pp. 2124-2137.

[2] "Principles Adopted by Land Commission," Laws Haw. 1847, p. 81; Rev. Laws Haw. 1925, Vol. II, p. 2124.

[3] That the practice of dispossessing tenants arbitrarily may not have been altogether uncommon is inferable from the following statement in a law enacted May 16, 1842:

"Formerly, if the Landlord became dissatisfied, he at once dispossessed his tenant even without cause, and then gave his land to whomsoever asked for it.

"At the present time that practice is at an end; lands are held by a strong tenure; they cannot be seized without cause."

These paragraphs were part of a long preamble to a new law designed to correct "the idleness of the people on their own free days," the translation of which appears in Thurston, L. A., op. cit. (footnote 1), pp. 133-135.

sidered to have some rights in the lands or its products, but the respective proportions were not clearly defined. Thus possession of allotted land, though basically temporary and insecure even during the life of the holder, carried with it water rights, fishing rights, and the right to use forest products. This was essentially a feudal system, although the common people were not serfs tied to the soil and might move from the possessions of one chief to those of another; and the system was closely interwoven with the government which emanated from the king as absolute ruler and extended down through the chiefs and officials of various ranks to the great mass of common people.

Complications over the land question developed as alien residents became numerous and endeavored to secure fee-simple titles to lands. The foreigners were aided in some cases by diplomatic agents of the governments to which they owed allegiance, although the home governments apparently rather consistently took the position that the matter was for the Hawaiians to decide. During the same period various missionaries and others interested in the welfare of the common people were making efforts to secure the people in the possession of the land on which they lived and worked, efforts which found legislative expression in 1839 and 1840. In the meantime the form of government had been undergoing modifications that resulted in lessening the absolute power of the king and transferring some of the general legislative power to the chiefs or nobles.

Early Remedial Legislation

The bill of rights issued in 1839, and included with some amendments as a preamble in the first constitution of 1840,[4] declared among other things that the chiefs and the people were entitled to the same protection under the same law; that all persons should be secured protection in their lands, building lots, and all property; and that nothing should be taken from any individual except by express provision of law.[5]

The laws of 1839 included an act to regulate taxes.[6] This act contained much discoursive material in the way of explanation, admonition, warning, and advice, as well as direct law; it was in part a set of principles and in part a code of laws with penalties. While taxation was the main theme, provisions were included relating to farm tenure and management, relations between landlord and tenant, inheritance of lands, fishing rights, and other matters of public welfare. One section entitled "Of the division of water for irrigation" provided that in all irrigated regions, all farms that theretofore had been denied water should thereafter receive their equal proportion, in order "to correct in full all those abuses which men have introduced,"

[4] Kuykendall, R. S., op. cit. (footnote 1), pp. 159, 160, and 168.

[5] Translations of the declaration of rights are printed in Thurston, L. A., op. cit. (footnote 1), p. 1, and Kuykendall, R. S., op. cit. (footnote 1), pp. 160-161. Another source is "Hawaii's 'Blue' Laws, Constitution and Laws of 1840," 164 pp., republished, Honolulu, 1894.

[6] Enacted June 7, 1839, approved November 9, 1840. Translation printed in Thurston, L. A., op. cit. (footnote 1), pp. 12-34. The section relating to division of water for irrigation is on pp. 29-30.

and that the allowance of water should be in proportion to the amount of taxes paid by the several lands. The section then went on to condemn in strong terms, apparently with reference to the entire property system of the kingdom, "the old system of the King, chiefs, land agents and tax officers" which had been "in vogue down to the present time," and declared that it was not in accordance with the purpose of this present law that "the land agents and that lazy class of persons who live about us should be enriched to the impoverishment of the lower classes who with patience toil under their burdens and in the heat of the sun," and that that "merciless treatment of common people must end."

The first constitution of the kingdom was granted by Kamehameha III October 8, 1840.[7] This constitution contained among other things an exposition of the principles upon which the existing dynasty was founded. Important in connection with the present discussion is the declaration that to Kamehameha I, the founder, had belonged all the land, but not as his own private property; that the land belonged in common to the chiefs and people, of whom the king was the head, and that it was subject to his management. This appears to have been the first formal acknowledgment by the government that the common people had some form of ownership interest in the land as distinguished from rights of use.

This constitution also set forth the duties and prerogatives of the king; defined the offices of premier of the kingdom[8] and of the four governors of islands and groups of islands; established a bicameral legislature consisting of a house of nobles and a representative body, the concurrence of a majority of each house (as well as of the king and premier) being necessary to the enactment of law; provided for tax officers and judges of courts; and established a supreme court, of appellate and final jurisdiction, consisting of the king, premier, and four persons appointed by the representative body. The creation of this representative body, chosen by the people, admitted the people for the first time to a share in the government.[9]

During the decade following the adoption of the constitution of 1840 the troublesome land question was brought to a climax. A land commission was created for the purpose of passing upon claims of private individuals to "landed property"; the "Great Mahele" or voluntary division of the large tracts between the king and the chiefs was consummated; and provision was made for awarding to the common people the "kuleanas" or homesteads they had been occupying. The labors of the land commission, the awards of which form the basis of a large portion of private land titles today, were completed in 1855.

[7] Translation printed in Thurston, L. A., op. cit. (footnote 1), pp. 1-9.

[8] It was provided that the business of the kingdom which the king wished to transact should be done under his authority by the premier; that neither should act without the knowledge of the other; that the king might veto the acts of the premier; and that the king might transact in person such important business of the kingdom as he chose, but not without the approbation of the premier. The officer styled premier of the kingdom in this translation of the constitution of 1840 is called "Kuhina Nui" in sec. II, art. 43 of the constitution granted by the same king June 14, 1852, printed in Thurston, L. A., op. cit. (footnote 1), pp. 155-168.

[9] Kuykendall, R. S., op. cit. (footnote 1), p. 167.

Professor Kuykendall's work contains a chapter devoted to "The Birth of Constitutional Government," including a discussion of the laws of 1839 and an analysis of the constitution of 1840, pp. 153-169. A footnote on p. 168 gives a bibliography of the first constitution and various early laws.

The Land Commission

The most far-reaching of the several land laws enacted in 1845 and 1846 related to the creation of a board of commissioners to quiet land titles, commonly referred to as the "land commission."[10] The act was passed December 10, 1845 and took effect February 7, 1846. The board consisted of five commissioners including the attorney general; and while the original act provided (sec. 6) that the existence of the board should continue for two years from the date of the first publication of its public notice, which would have ended its existence February 14, 1848, its life was extended from time to time and it was finally dissolved March 31, 1855.[11]

The authorized functions of the commission comprised "the investigation and final ascertainment or rejection of all claims of private individuals, whether natives or foreigners, to any landed property acquired anterior to the passage of this Act" (sec. 1); its awards were to be deemed forever settled, unless appealed to the supreme court, and its rejections of claims were to be deemed forever barred and foreclosed unless similarly appealed (sec. 13). The act required the decisions of the board to be in accordance with established principles of the civil code regarding the occupancy and use of land, including such matters as prescription, fixtures, native usages in regard to landed tenures, water privileges and fishing rights, rights of women, rights of absentees, tenancy, primogeniture, and adoption (sec. 7).

Principles Adopted by the Land Commission

Several months after its organization, following an investigation which included examinations of numerous witnesses among whom were some of the oldest chiefs, the land commission adopted a set of principles for guidance in reaching its decisions. This was done August 20, 1846; and the principles were ratified by resolution of the legislature October 26 of that year and thereby enacted into law.[12]

The preface contained a rather detailed analysis of the character of existing tenures, a statement of the steps leading up to the organization of the commission and of its authority, and a summary of the benefits that were expected to result from its investigations and awards—all of which the commissioners deemed necessary to a clear understanding of the awards upon which they were about to enter.

In attempting to arrive at the just proportional rights of the three classes of persons having vested rights in the land, as yet undivided—that is, (1) the king or government, (2) the chief or landlord, and (3) the tenant—the commissioners suggested that a tract of land in the hands of a landlord and occupied by tenants, all parts being equally valuable, might be divided into three equal parts. Fee-simple title to one part might properly be given

[10] Laws Haw. 1846, p. 107 (Rev. Laws Haw. 1925, Vol. II, p. 2120). The acts relating to the creation, functions, and dissolution of the land commission, and to certain rights to unawarded lands, appear in Rev. Laws Haw. 1925, Vol. II, "Public Lands," pp. 2120-2152. The original acts are: Laws 1846, p. 107; Laws 1847, pp. 35, 79, 80, 81, 94; Laws 1848, p. 46; Laws 1850, p. 202; Laws 1851, p. 94; Laws 1852, pp. 26, 28; Laws 1853, pp. 11, 26; Laws 1854, pp. 21, 25; Laws 1855, p. 28; Laws 1860, p. 27; Laws 1890, ch. 78; Laws 1892, ch. 68.

[11] Laws Haw. 1854, p. 21 (Rev. Laws Haw. 1925, Vol. II, p. 2146).

[12] Laws Haw. 1847, p. 94 (Rev. Laws Haw. 1925, Vol. II, p. 2137). The principles and the resolution of ratification are set out in full in Laws Haw. 1847, pp. 81-94, and in Rev. Laws Haw. 1925, Vol. II, pp. 2124-2137.

to the landlord, the same title to one-third to the tenants, and the remaining one-third retained by the king. This related particularly to districts, plantations, and farms, inasmuch as building lots with some exceptions had not been bestowed by the king or lords for the purpose of being given out to tenants.

Seven principles were stated. The first five dealt with the nature of the inquiries that would be made into claims of various origin. In the sixth principle the commissioners stated their understanding that the government's share to be commuted for with the minister of the interior by any claimant wishing to obtain a fee-simple title, amounted to one-third of the value of the land without improvements, payment of which would extinguish the private rights of the king and leave the claimant an allodium (fee-simple estate). This they considered the maximum value of the government's interest for which valuable consideration had never been received, even from the private chiefs from whom the claimants derived their tenure; but by this they did not mean to restrict the power of the king in privy council to fix upon a lesser commutation.[13] The seventh principle dealt with the barring of rights of parties who should neglect to present their claims within the period allowed by law.

Nature and Force of the Land Commission Awards

The land commission awards gave complete title, subject only to the government's rights of commutation; that is, they gave title less than allodial. The awards did not in themselves constitute patents in fee simple or leases, which the commission had no authority to grant; the award was the commission's decision and adjudication as to the claimant's kind and amount of title. The patents and leases emanated from the minister of the interior, who was required by the land commission act (secs. 9 and 10) to issue them to the holders of land commission awards upon payment of the necessary charges. But the land commission act provided (sec. 13) that an award not appealed to the supreme court should be deemed to be forever settled; and the act dissolving the commission stated[14] that, subject to government commutation, a land commission award not appealed from "shall be final and binding upon all parties, and shall be a good and sufficient title to the person receiving such award, his heirs or assigns, and shall furnish as good and sufficient a ground upon which to maintain an action for trespass, ejectment or other real action, against any person or persons whatsoever, as if the claimant, his heirs or assigns, had received a Royal Patent for the same; * * *."

[13] The commutation arrived at in ordinary cases amounted to the one-third share of the unimproved value thus fixed by the land commission; but while this was the general rule, the privy council approved the principle of one-fourth of the unimproved value in case of house and building lots awarded to Hawaiian subjects: Kuykendall, R. S., op. cit. (footnote 1), p. 282.

In a case decided by the supreme court in 1890, it was held that the uniform practice of the government had been to accept in commutation of its rights in an awarded land one-third of the unimproved value of the land *at the time the award was made;* that as this construction had been followed without challenge for a long series of years, it had become a practical construction; that as the statute was silent and hence doubtful on the point, the public had a right to assume that the rule adopted at the time the act was put in force would continue to be the principle regulating the commutation; therefore the value of the land at the time the award was made was held to be the basis of its appraisement for commutation. *Minister of Interior* v. *Papaikou Sugar Co.,* 8 Haw. 125, 128 (1890).

[14] Laws Haw. 1854, p. 21, sec. 3 (Rev. Laws Haw. 1925, Vol. II, p. 2146).

The courts have accorded great respect to the land commission awards; they have recognized their finality and have refused to allow them to be attacked in collateral proceedings. In 1851 the court refused to go behind an award to consider evidence of its having been obtained by fraud. [15] In a case that was decided several years later, objection having been made to the introduction in evidence of the certificate of a land commission award, it was held that the certificate and its accompanying survey were admissible as evidence and when they appeared to be genuine, were at least *prima facie* evidence of the right of the party in whose favor the certificate was issued; but the genuineness of the certificate being under attack, the court examined the records of the commission to determine the question.[16] In a subsequent case the court admitted evidence to show whether or not error existed in recording the judgment of the commission, from which no appeal had been taken, but not for the purpose of reviewing the commission's decision.[17] It was stated in 1862:[18] "The Court regard a Land Commission award as final." Also that "* * * the Land Commission, with the powers of a Court of Record, was competent to judge of its own authority, and whatever it did was final, unless reversed or modified by the Supreme Court upon appeal." In 1885 the court said:[19]

> The law in this case, respecting the examination of proceedings before the Land Commission, has been placed by this Court * * * on a foundation which cannot be disturbed. Every year which passes increases the force of the reason which demands that the adjudications of the Land Commission be not now re-examined.

The Territorial supreme court has taken the same position. It was said in 1908 that "the land commission award was the final decision of a court of record which was the only court of competent jurisdiction to decide claims to land accruing prior to its establishment, and its decisions could not be attacked except by the appeal provided by law."[20] In a subsequent case it was emphasized that the conclusiveness of awards of the land commission had been repeatedly upheld by the courts of Hawaii;[21] and as recently as 1928 it was held that an award of the land commission, from which no appeal was taken as permitted by law, became final and conclusive and could not at this late date be set aside or modified or successfully attacked in a collateral proceeding.[22]

Although the foregoing principle—that a land commission award not appealed from is final—is fundamental in Hawaiian land law, there was a protracted controversy that twice reached the United States Supreme Court over the application of the principle to an equity case in which a land com-

[15] *Kukiiahu* v. *Gill*, 1 Haw. 54, 55 (90, 91) (1851).

[16] *Kalama* v. *Kekuanaoa and Ii*, 2 Haw. 202, 208 (1857). See also *In re Boundaries of Kewalo*, 3 Haw. 9, 11 (1866).

[17] *Bishop* v. *Namakalaa and Kahinukawa*, 2 Haw. 238, 239, 240 (1860).

[18] *Keelikolani* v. *Robinson*, 2 Haw. 522, 539, 551 (1862).

[19] *Kaai* v. *Mahuka*, 5 Haw. 354 (1885).

[20] *In re Lewers & Cooke (Atcherley* v. *Lewers & Cooke)*, 18 Haw. 625, 639 (1908); petition for rehearing denied, 19 Haw. 47 (1908); affirmed, *Lewers & Cooke* v. *Atcherly*, 222 U. S. 285 (1911).

[21] *Territory of Hawaii* v. *Gay*, 26 Haw. 382, 396, 400 (1922).

[22] *In re Kakaako*, 30 Haw. 666, 675, 677 (1928).

mission award was involved. A decree had been rendered in 1858, ordering the guardian of the minor heirs of the recipient of a land commission award to convey the awarded land to one who claimed under a will made prior to the award. No conveyance was actually made, but otherwise the order was substantially complied with and the successors of the claimant under the will continued in possession, which apparently was not contested legally until a successor in interest of the guardian brought an action in ejectment based upon the legal title. The litigation that followed involved various points and took different forms, which so far as the point here discussed is concerned—the conclusiveness of a land commission award—may be summarized thus:

The Supreme Court of Hawaii in 1908 took the position that the decree of 1858 was erroneous as a matter of law in assuming the power to order this conveyance, being held to be a collateral attack on a land commission award.[23] The question involved was considered to be a fundamental principle of Hawaiian law. Appeal was taken to the United States Supreme Court, which affirmed the decisions in 18 Haw. 625 and 19 Haw. 47 to the effect that the adjudication of the land commission bound all interests and that the decree of 1858 was wrong; the point being made that great weight should be attributed "to the decision of the court on the spot," involving as it did obscure local history and local law.[24]

The same controversy and the same material facts again came before the Territorial supreme court and appeal was again taken to the United States Supreme Court, which on this occasion reversed the decision.[25] The Hawaii court pointed out that the guardianship relation, vitally important though it was, apparently had received scant consideration in the *Lewers & Cooke* case and had not been included in the findings of fact certified up to the Supreme Court; and now confessed that it had fallen into error in taking the view that the equity suit decided in 1858 constituted an attack on the award of the land commission and that the decree therein amounted to a setting aside of the award. However, as the United States Supreme Court had held, in support of the Territorial court, that the decree of 1858 was erroneous and that the judgment of the land commission bound all interests, the Territorial court concluded that that decision of the highest tribunal must be followed. The Supreme Court on appeal, however, stated that the guardianship relation, now cleared up, necessarily was the important fact; and that a guardian could not, through the instrumentality of a land commission award, obtain title to the property of his ward and remain immune from subsequent redress of the wrong. The latest pronouncement of the Territorial court as to the effect of the decree of 1858 was therefore approved, but the actual decision of the Territorial court was necessarily reversed.

[23] *In re Lewers & Cooke (Atcherley* v. *Lewers & Cooke),* 18 Haw. 625, 638 (1908); petition for rehearing denied, 19 Haw. 47 (1908). In *Kapiolani Estate* v. *Atcherly,* 14 Haw. 651 (1903), a decree sustaining a demurrer to a bill for an injunction against the maintenance of the ejectment suit was reversed; but now the court held that an additional point, not decided in 1903—the binding effect of the land commission award—was decisive of the fact that the decree of 1858 should not be enforced. The case came before the supreme court again in 1909, on appeal from a decree of the court of land registration denying the petition for registration of title, but on this appeal the court did not discuss the correctness of its ruling on the former appeal: *In re Lewers & Cooke,* 19 Haw. 334 (1909).

[24] *Lewers & Cooke* v. *Atcherly,* 222 U. S. 285, 294-295 (1911).

[25] *Kapiolani Estate* v. *Atcherley,* 21 Haw. 441, 445-446, 453-454 (1913); reversed, *Kapiolani Estate* v. *Atcherley,* 238 U. S. 119, 136-137 (1915).

The Mahele:

Division Between the King and the Chiefs[26]

The awards of the land commission during the first two years of its existence concerned mainly the claims of foreigners and of a few natives, mostly in connection with lots and leased land. The duty of the commission was to pass upon claims actually presented; it had no authority to divide lands or to change tenures, and the statement in the preface to its principles concerning an equitable division of equally valuable areas into thirds, to go respectively to the king, the landlord, and the tenants, was a suggestion which was not acted upon by the parties in interest. Hence an agreed and acceptable definition of the relative rights of the king, the chiefs, and the common people and a comprehensive basis of distribution of lands were necessary before claims affecting the great body of lands in the kingdom could be passed upon.

Agreement upon a basis of distribution was not easy, but was reached after discussions extending over a period of two years after the passage of the land commission act. Rules governing the proposed division of lands between the king and the chiefs or konohikis[27] were finally adopted by the privy council December 18, 1847, together with a resolution that a committee be appointed to divide the lands. The actual division was then made in cooperation with this committee and was recorded in the Mahele Book; and this transaction, called "The Mahele" or division (also known as "The Great Mahele"), consisted of a number of individual divisions between the king and each chief or konohiki extending over the period January 27 to March 7, 1848. The lands theretofore claimed by a particular konohiki were listed on opposite pages of the Mahele Book, those which it was agreed would be kept by the king on one page and those to be kept by the chief on the other, each list followed by a certificate of the other party agreeing to the division as satisfactory and quit-claiming his interest in the lands so listed. "The Mahele" then comprised a number of individual maheles; but that it was essentially one transaction was well understood. It was stated in a decision by Associate Justice Judd of the supreme court:[28]

> Now, although these maheles were executed day after day until the work was completed, it was because it was too great a task to be all completed in one day, and they might well have all been dated on one and the same day. It was all one act. None of the maheles by the King to any chief could claim by

[26] Based principally upon Kuykendall, R. S., op. cit. (footnote 1); King, R. D., op. cit. (footnote 1); and "Principles Adopted by Land Commission," Laws Haw. 1847, pp. 81-94 (Rev. Laws Haw. 1925, Vol. II, pp. 2124-2137).

[27] The word "konohiki" as used in the early land laws and court decisions construing them is practically synonymous with "chief" or "landlord." Originally the konohiki was an agent of the chief in the administration of land and water problems, but in the land laws it referred to the landlord himself as distinguished from the tenant or "hoaaina." After the Mahele or division of lands, and the final extinguishment of the feudal system, the word konohiki continued in usage to designate privately owned land. As stated by the Territorial supreme court: "Konohiki, when used as a noun, designated the person having charge of the land in behalf of the king or chief or other person to whom the ahupuaa had been assigned or awarded, but the word 'konohiki' is in common use as an adjective denoting land which is privately owned in contradistinction to 'aupuni' or government land. The classification of the lands in these islands which has been in vogue since the great mahele of 1848 is (1) government land; (2) crown land; (3) konohiki land, and (4) kuleanas of the common people." *In re Title of Kioloku*, 25 Haw. 357, 360-361 (1920).

[28] *Harris* v. *Carter*, 6 Haw. 195, 203 (1877).

virtue of its earlier date any priority or superiority of title over the mahele by any chief to the King.

The whole work was one scheme; one part was contemporaneous with every other part.

The effect of the Mahele was to divide the lands of the kingdom between the king on the one hand and the chiefs on the other hand, as against each other. Each chief received permission to take his claims before the land commission, but the king did not bind himself to have his own titles investigated and confirmed. The interest of the government (commutation) in the lands so divided, and the rights of tenants on the lands, were not affected by the Mahele. These matters are discussed hereinafter.

Division Between the King and the Government

The Mahele left the king in possession of the larger part of the lands in the kingdom, including those previously in his own hands and those possession of which was resumed by virtue of the Mahele. However, as stated in a decision of the supreme court:[29]

> * * * it is evident from the minutes of the Privy Council, that the lands comprised in that domain were not regarded as the King's private property strictly speaking. Even before his division with the landholders, a second division between himself and the government or state was clearly contemplated, and he appears to have admitted that the lands he then held might have been subjected to a commutation in favor of the government, in like manner with the lands of the chiefs. * * *

Accordingly on March 8, 1848—the day following completion of the Mahele between the king and the chiefs—the king conveyed to "the chiefs and people" of the kingdom all his right, title, and interest in certain lands which constituted the larger part of the great domain of which he then stood possessed, reserving certain other lands for himself and his "heirs and successors forever, as my own property exclusively." The ceded lands were to be regulated and disposed of in accordance with the will of the legislature, for the good of the government. This was done by virtue of two instruments contained in the Mahele Book. This act of the king was confirmed by the legislature June 7, 1848, in an act which listed the private lands of the king, those accepted as the property of the government, and those set apart as fort land.[30] The question of commutation of the king's lands was thus disposed of, his surrender of by far the greater portion of his lands having completely extinguished the government right of commutation in what was left.[31]

The lands so reserved by the king were known thereafter as "crown lands," and those conveyed to the government as "government lands." The crown lands not disposed of by the crown became the property of the Hawaiian government upon the formation of the republic, as shown hereinafter in the discussion of "Original titles."

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[29] *In re Estate of His Majesty Kamehameha IV*, 2 Haw. 715, 722 (1864).

[30] Laws Haw. 1848, p. 22 (Rev. Laws Haw. 1925, Vol. II, p. 2152). Translations of the two instruments which effectuated the division between the king and government are given in *In re Estate of His Majesty Kamehameha IV*, 2 Haw. 715, 723 (1864).

[31] *Harris* v. *Carter*, 6 Haw. 195, 204 (1877).

Awards of Lands to the Common People

From the time of the declaration of rights in 1839 it was evident that security of title to land in the people—the tenants as well as the landlords—was appreciated as an essential element of land reform. This was clearly recognized in the preface to the principles adopted in 1846 by the land commission, which contained a suggestion that title to one of three parts of occupied land, all parts being equally valuable, should go to the tenants (see pp. 24-25, above). Later in the same year (November 7, 1846) the legislature passed a joint resolution defining the rights of the hoaaina (tenant) in the land, the rights of the konohiki (landlord), and the rights of the government, and providing that any man might purchase from the government an allodial title to the land which he had himself cultivated and that a konohiki might secure an allodial title to his portion of a given tract.[32] This was later termed by the supreme court one of the expedients resorted to with a view to obviating the land difficulties, but which evidently could be of but little real benefit.[33] Apparently sight was never lost of the fact that the tenants had rights that must be respected and protected, and recognition of this fundamental conception recurs repeatedly in the land legislation during the period of land reform and in the supreme court decisions interpreting the land laws. It likewise appears to have been consistently a matter of administrative policy.[34]

Finally, on August 6, 1850, the legislature confirmed resolutions of the king in privy council that had been passed December 21 previously, and added further provisions, substantially as follows:[35]

The land commission was empowered to award fee-simple titles, free of commutation, to all native tenants who had occupied and improved lands of the government, the king, or any chief or honohiki, excepting house lots or lands in Honolulu, Lahaina, or Hilo, and whose claims should be recognized as genuine by the land commission.[36] The commission was authorized to provide for equitable exchanges of portions of lands belonging to different individuals; and sales of government land in small parcels to natives not otherwise furnished with sufficient land were provided for. Awards of the land commission were to be limited to bona fide cultivated tracts, plus small house lots distinct from the cultivated lands.

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[32] Joint Resolution of November 7, 1846; Laws Haw. 1847, p. 70 (Rev. Laws Haw. 1925, Vol. II, p. 2193).

[33] *In re Estate of His Majesty Kamehameha IV*, 2 Haw. 715, 721 (1864).

[34] The Territorial Supreme Court, in referring to a land commission award based upon a grant in the Mahele, stated that the award "contained the usual exception," which was translated as "excepting, however, the kuleanas of the natives therein." *In re Kakaako*, 30 Haw. 666, 668 (1928).

"Kuleanas, while held as such, do not form a part of the ahupuaa even though situated within it." *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.*, 20 Haw. 658, 665 (1911), quoted with approval in *McCandless* v. *Waiahole Water Co.*, 35 Haw. 314, 319 (1940). See also *In re Title of Pa Pelekane*, 21 Haw. 175, 184-186 (1912).

[35] Laws Haw. 1850, p. 202 (Rev. Laws Haw. 1925, Vol. II, p. 2141).

[36] "These tenants, on taking out their Kuleanas, paid no commutation to the Government, for the holder of the award of the Ahupuaa or Iliaina, out of which they were taken, settled for the whole Government commutation. In the towns of Honolulu, Lahaina, and Hilo, the awards of Kuleanas for houselots were subject to commutation, there being no superior lord or chief over them whose Ahupuaa or Ili they were included in and whose commutation covered their's." *Harris* v. *Carter*, 6 Haw. 195, 205 (1877).

The resolutions confirmed in 1850 further defined the rights of tenants and of the people in lands to which landlords had taken fee-simple titles.[37] The people were to have the right to take firewood and certain other products for their own private use (but not to sell for profit) from the land on which they lived, together with a right to drinking water, running water, and the right of way. On all lands granted in fee simple the springs of water, running water, and roads were to be free to all, except as to wells and watercourses that individuals had provided for their own use. This enactment, a decision of the supreme court stated, was designed to protect the tenants in the enjoyment of the enumerated rights as against the sweeping operation of the konohikis' allodial titles, and superseded the joint resolution of November 7, 1846 to the extent to which the two enactments were inconsistent.[38]

The awards to the common people are estimated to have aggregated a little less than 30,000 acres, whereas the chiefs or konohikis received as a result of the distribution of land a little more than 1,500,000 acres, and the crown land and government land aggregated somewhat less than 1,000,000 acres and 1,500,000 acres, respectively. [39] However, Professor Kuykendall points out that nearly all the awards to the common people were very valuable for their own agricultural pursuits so long as enjoyment of the appurtenant water rights was assured (this assurance has been a ruling principle of water-right law in Hawaii, as noted hereinafter), while extensive areas of the other groups were mountainous, desert, or forest land.[40] The kuleanas of the common people consisted primarily of irrigated taro lands in the valleys, which were then regarded as by far the most valuable lands, and necessarily aggregated only a very small fraction of the total land area. As a matter of fact, the suggestion of the land commission that a tract of land in the hands of a landlord and occupied by tenants might be divided into three equal parts was premised, not upon equal area, but upon equal value of the three parts (see pp. 24-25, supra).

Original Titles: Confirmation and Limitations

Crown Lands

The title of the king to the crown lands reserved for himself remained complete after the division with the konohikis and that with the government. No further formalities were required in perfecting title; whatever right the

[37] Laws Haw. 1850, p. 203, s. 7 (Rev. Laws Haw. 1925, Vol. II, p. 2142). As revised, this definition of rights is still on the statute books, being sec. 12901 of Rev. Laws Haw. 1945. See p. 100, below.

[38] *Oni* v. *Meek*, 2 Haw. 87, 91-95 (1858).

[39] Kuykendall, R. S., op. cit. (footnote 1), p. 294. These figures are stated to have been indicated by estimates made by the government survey department in 1893, citing W. D. Alexander to S. M. Damon, June 24, 1893, and accompanying statistics, in *House Ex. Docs.*, 53 Cong., 3 Sess., No. 47, pp. 639-641.

[40] Kuykendall, R. S., op. cit. (footnote 1), p. 294.

government may have had to commutation had been more than satisfied, so that the king's title was already perfect. Thus:[41]

> The King could not perfect his already perfect title to his own Iliainas. No one would seriously contend that the King was obliged to go to the Land Commission for awards or patents of his own lands, even for commutation purposes, when we bear in mind that he had surrendered to the Government by far the greater portion of the lands that remained his, which extinguished completely the Government right to commutation in what was left.
>
> * * * No one would seriously contend that the King should have procured awards of his own lands from the Land Commission, or signed Royal Patents to himself for them.

The constitution of the Republic of Hawaii (adopted July 3, 1894) declared the portion of the public domain known as crown land to be the property of the Hawaiian government;[42] and the Hawaiian Organic Act contained a declaration that the land theretofore known as crown land had been on August 12, 1898 and prior thereto the property of the Hawaiian government.[43] Since then the crown lands and government lands have been equally a part of the public domain, subject to the same rules, title to "all public, government or crown lands" having been ceded to and accepted by the United States;[44] and the title of the government to the crown lands cannot be questioned by the courts.[45]

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[41] *Harris* v. *Carter*, 6 Haw. 195, 204, 206 (1877).

[42] "That portion of the public domain heretofore known as Crown Land is hereby declared to have been heretofore, and now to be, the property of the Hawaiian Government, and to be now free and clear from any trust of or concerning the same, and from all claim of any nature whatsoever, upon the rents, issues and profits thereof. It shall be subject to alienation and other uses as may be provided by law. All valid leases thereof now in existence are hereby confirmed." (Constitution, Republic of Hawaii, art. 95.)

[43] "That the portion of the public domain heretofore known as Crown land is hereby declared to have been, on the twelfth day of August, eighteen hundred and ninety-eight, and prior thereto, the property of the Hawaiian government, and to be free and clear from any trust of or concerning the same, and from all claim of any nature whatsoever, upon the rents, issues, and profits thereof. It shall be subject to alienation and other uses as may be provided by law." (Organic Act, Territory of Hawaii, 31 Stat. L. 141, ch. 339, sec. 99 (April 30, 1900).)

[44] Resolution of Hawaii Senate ratifying treaty of annexation (included in Rev. Laws Haw. 1945, p. 20); Joint Resolution of Congress to provide for annexation, 30 Stat. L. 750 (included in Rev. Laws Haw. 1945, pp. 18-19).

[45] In *Territory of Hawaii* v. *Kapiolani Estate*, 18 Haw. 640, 645-646 (1908), an action brought by the Territory to recover possession of land leased by the crown land commissioners in 1882, the supreme court refused to sustain an objection, on demurrer, that the complaint did not show the title to be in the Territory. The court said:

"As above stated, it was unnecessary to aver the title of the Territory in that portion of the public lands which at the date of the lease were known as crown lands since judicial notice is taken that by Art. 95 of the constitution of the Republic of Hawaii the crown lands were declared to be the property of the Hawaiian government and that by the public land act of 1895 those lands as part of the public domain were placed under the management of the commissioner of public lands, a title which was recognized by the joint resolution of annexation, the lands having been ceded by the Republic of Hawaii to, and accepted by, the United States, and also recognized by the organic act (Sec. 83) in continuing in force the land laws of the Republic of Hawaii, and (Sec. 99) declaring that the crown lands on August 12, 1898, were, and prior thereto, had been, the property of the Hawaiian government. The validity of the declaration in the constitution of the Republic of Hawaii, under which the present title is derived, does not present a judicial question. Even assuming, but in no way admitting, that the constitutional declaration was confiscatory in its nature, this court has no authority to declare it to be invalid. The subsequent derivation of the title by the United States, as above stated, is clear."

This decision, to the effect that a judicial question is not presented by a claim requiring a ruling that article 95 of the constitution of the republic is unconstitutional, was followed in *Territory of Hawaii* v. *Puahi*, 18 Haw. 649, 651 (1908). The court added that "neither in that case nor in this was any reason suggested for holding the subsequent transfer of title to the United States invalid or unconstitutional."

This question was again referred to in *Territory of Hawaii* v. *Kapiolani Estate*, 20 Haw. 548, 552 (1911; writ of error dismissed, *Kapiolani Estate* v. *Territory of Hawaii*, 231 U. S. 766 (1913)). The decision in 18 Haw. 640 was noted by the Territorial supreme court as having disposed of the point with reference to the same land as that involved in the instant case; and under the circumstances of the instant case it was considered that a reexamination of the subject was not required.

Konohiki Lands

The Mahele confirmed the right of possession of each konohiki in the lands so reserved to him, as against the right of the king as a landowner; but as against the government it did not vest title. The Mahele was in recognition of "rights"; it created no estate in lands and conveyed no title, but was "evidence of title."[46] What it did was to give the konohiki the basis for a claim to an award of title. To secure title, he must thereafter present to the land commission his claim based upon the Mahele and must substantiate his claim, whereupon he was entitled to receive a land commission award which gave him a title less than allodial to the land;[47] and he could thereafter secure fee-simple title to the awarded land by settling with the government for commutation and in return obtaining a patent. The award confirmed the title; the patent in effect quit-claimed the interest of the government in lands to which the private individual's title had been confirmed by the award.[48]

The joint resolution of November 7, 1846,[49] concerning rights of hoaainas and konohikis, provided in section 7 that upon petition of any konohiki to have his portion of an ili or ahupuaa[50] set off to him according to his rights therein, in order that he might procure an allodial title, the minister of the interior, with the approbation of the king in privy council, should have power to complete arrangements for the same, after which patent should issue. The supreme court in 1920, in acting upon reserved questions in a land case, stated that this statute clearly authorized the minister of the interior under these conditions "to settle with a konohiki who had by the great mahele been given an interest in an ili his rights in said land and to issue a patent therefor without the prior action of the land commission thereon."[51] This was a marked departure from the concept that had prevailed uniformly up to that time—that while the land commission was in existence, an award therefrom was prerequisite to the establishment of title to land claimed by a konohiki under the Mahele; and when this case came up

[46] *Territory of Hawaii* v. *Gay,* 26 Haw. 382, 398, 402 (1922). The Supreme Court of Hawaii has stated repeatedly that the Mahele did not vest title. See, in addition, *Kenoa* v. *Meek,* 6 Haw. 63, 67 (1871); *In re Title of Pa Pelekane,* 21 Haw. 175, 185 (1912); *In re Austin (Land Title, Waimalu),* 33 Haw. 832, 838 (1936).

[47] "The question would be what passed by the award rather than what was referred to in the Mahele. As frequently held, private titles were not acquired by the Mahele, but upon the awards of the land commission subject to which the Mahele was understood to have been made. * * *" *In re Title of Pa Pelekane,* 21 Haw. 175, 185 (1912).

[48] *Brunz* v. *Smith,* 3 Haw. 783, 787 (1877); *Mist* v. *Kawelo,* 11 Haw. 587, 589 (1898).

[49] Laws Haw. 1847, p. 70 (Rev. Laws Haw. 1925, Vol. II, p. 2193). This resolution has been referred to above in connection with "Awards of lands to the common people," p. 30.

[50] These terms are defined and discussed in the concluding portion of this chapter under the heading "Land units intimately associated with questions of water rights." Briefly, ahupuaas and ilis kupono were large units of land put into the possession of chiefs, as konohikis or landlords, by the king prior to the Mahele. An ili kupono, in the usual case, was a geographical part of an ahupuaa but was independent of it, having been reserved by the king for his own use or for the use of another konohiki; or it may not have been located within any ahupuaa. Following the Mahele and the immediately succeeding division between the king and the government, certain ahupuaas and ilis remained the property of the king; certain others were the property of the government; and the remainder became subject to awards of title by the land commission, and later by the minister of the interior, to the konohikis to whom the king had quit-claimed his interest in the Mahele Book. The original status of a tract as an ahupuaa or ili has had a bearing upon questions that have arisen in various cases concerning the tract, including water rights, as noted hereinafter (see pp. 42-45).

[51] *Territory of Hawaii* v. *Gay & Robinson,* 25 Haw. 651, 656 (1920).

on writ of error to review the judgment of the lower court, the supreme court took pains to correct what it considered to have been its own error.[52] The court felt that while the correctness of that ruling was not vital to a determination of the issues involved, it could not be permitted to go unchallenged and allowed "by lapse of time and concurrence by silence to become ingrafted upon the law of land titles in these Islands." This joint resolution, it was stated, must be interpreted in the light of the plain terms of the act creating the land commission, the principles of the commission, and the Mahele; and as so interpreted, it conferred no authority on the minister of the interior to settle with claimants of maheled lands who had not procured awards from the land commission, such authority having not been granted prior to the passage of the Act of August 24, 1860[53]—5 years after the dissolution of the land commission. This joint resolution operated only in respect to and in settlement of "rights" that by the confirmation and award of the land commission had become estates in land.

Finally, with the apparent purpose of setting at rest any doubts that may have been created by its pronouncement two years before, the court stated (at p. 404):

> Hence we unqualifiedly hold that the mahele to Paniani of one-half of the Ili of Koula ripened into a "right," as contemplated by the joint resolution of June 7, 1846, only upon an award by the land commission and that it was not operative to authorize the minister of the interior to convey an estate in lands but only to settle by patent the government's commutation in kind upon and after the issuance of an award and that it was only upon the passage of the act of August, 1860, for the relief of konohikis that the minister of the interior had any authority in respect to land previously maheled to konohikis, when there was conferred upon him authority to issue awards upon maheles to konohikis who had failed to receive the same from the land commission.

The certificate of the king in the Mahele Book under the list of lands reserved to the konohiki gave permission to the latter to take such lands before the land commission. Some of the konohikis who participated in the Mahele failed to present their claims to the commission within the time allowed by law and in 1854 were granted an extension of time by the legislature;[54] and again in 1860, after the land commission had completed its labors and had been dissolved, the legislature granted a further extension of time within which the konohikis who had failed to receive awards from the land commission might secure from the minister of the interior awards equally valid with those of the land commission, such titles to be less than allodial and subject to commutation and not in conflict with land commission awards based upon actual survey of boundaries.[55] Some chiefs failed to take advantage of even this second extension and were granted relief in 1892 under an act which was to remain in force until January 1, 1895.[56] It

[52] *Territory of Hawaii* v. *Gay*, 26 Haw. 382, 401-404 (1922).

[53] Laws Haw. 1860, p. 27 (Rev. Laws Haw. 1925, Vol. II, p. 2148).

[54] Laws Haw. 1854, p. 25 (Rev. Laws Haw. 1925, Vol. II, p. 2147).

[55] Laws Haw. 1860, p. 27 (Rev. Laws Haw. 1925, Vol. II, p. 2148). This is the act for the relief of konohikis, referred to in the second preceding paragraph (see footnote 53).

The legislature in 1852 had provided that in certain cases titles might be granted to konohikis by names of lands, without survey. Laws Haw. 1852, p. 28 (Rev. Laws Haw. 1925, Vol. II, p. 2144).

[56] Laws Haw. 1892, ch. 68 (Rev. Laws Haw. 1925, Vol. II, p. 2151).

was provided that this last act should not be construed to conflict with or invalidate any previous grant or sale of land by the government or any existing award.

Failure of a konohiki to perfect title to the lands listed as his in the Mahele left the legal title in the government, to which his right to the land reverted.[57] Hence these blanket extensions of time were simply conditional grants from the government of a portion of its interest in the reverted lands and could not affect the rights of persons to whom the government had conveyed title in the meantime. In deciding a controversy of this character in 1871, Chief Justice Allen of the supreme court stated:[58]

> The Mahele itself does not give a title. It is a division, and of great value because, if confirmed by the Board of Land Commission, a complete title is obtained. But it was open to examination, and if the evidence was satisfactory that the Konohiki was entitled to the land according to the principles which governed that Board of Land Commission, their award gave a complete title. By the Mahele, His Majesty the King consented that Pahoa should have the land, subject to the award of the Land Commission.
>
> It appears by the whole course of legislation that an award of the Board of Land Commission was necessary to perfect the title until, by the law of 1860, the Minister of the Interior was authorized to grant awards.
>
> In my view, as Pahoa neglected to perfect his title before the Board of Land Commission, but suffered his claim to be barred, the legal title remained in the Government, and the Royal Patent to A. Bishop conveyed their title to him, and as it was prior to the patent issued to Pahoa, it must prevail.

The identical question decided in that case was before the Territorial supreme court in 1936; and in reaffirming the principle thus stated in 1871 the court observed:[59]

> We are in entire accord with the decision in *Kenoa* v. *Meek, supra,* but even were we inclined to question its soundness, the doctrine of *stare decisis,* which is a rule of precedent, would require us to follow it. When the courts of last resort have announced principles affecting the acquisition of title to real estate and the principles thus announced have been long established and conformed to, it is generally held that such decisions should not be overturned, although the principle announced therein might otherwise be questioned. * * *

Kuleanas

The awards of lands to the common people—native tenants—were called "kuleana" awards. They were free of commutation, as noted heretofor (p. 30), with the exception of house lots or lands in Honolulu, Lahaina,

[57] The title necessarily remained in the government. In the Mahele the king had quit-claimed his interest in such lands, and section 8 of the act creating the land commission provided that all claims to land, as against the Hawaiian government, not presented to the commission within the prescribed time should be deemed invalid unless the claimant were absent from the kingdom and had no representative therein. The supreme court stated in *Kahoomana* v. *Moehonua,* 3 Haw. 635, 639 (1875), with reference to a lot, after quoting from the land commission act and from the principles adopted by the land commission: "The Land Commission, however, did not award it; and by the force and effect of the statutes above quoted, it must be considered to still belong to the government." It was held in *Thurston* v. *Bishop,* 7 Haw. 421 (1888), that land not covered by a land commission award or royal patent, in the possession of one who was a minor when the time for filing claims with the commission expired, still belonged to the government. A case decided in 1912 involved title to a small tract, one of the points of dispute being whether the tract was part of an ahupuaa that had been awarded by the land commission, or whether the tract had been taken out of the ahupuaa prior to the award. In determining a question of admissibility of evidence, the supreme court observed: "If Pa Pelekane was never awarded by the land commission and had not been sold by the government the title remained in the government * * *." *In re Title of Pa Pelekane,* 21 Haw. 175, 178 (1912).

[58] *Kenoa* v. *Meek,* 6 Haw. 63, 67 (1871).

[59] *In re Austin (Land Title, Waimalu),* 33 Haw. 832, 839 (1936).

or Hilo; for with those exceptions the kuleanas were taken out of larger tracts for which the landlords had paid commutation to the government.

The kuleana awards were based upon claims presented to and recognized as genuine by the land commission. Those natives who neglected to present their claims to the commission lost their right to do so; and if they remained thereafter on the land without asserting any claim of ownership, they continued as tenants by permission of the landlord, their holdings not being adverse until they refused to pay rent or performed other acts that would render their possession hostile and adverse. As stated in a decision of the supreme court:[60]

> If the Land Commission expired and the hoaainas or native tenants neglected to present their claims for the parcels of the land which they desired, and for which they would ordinarily be awarded a kuleana title, showing merely their occupation of the same as a foundation for it, we think they must be considered as content with their prior status as tenants by permission of the land owner. Such tenancy would therefore, in law, be considered as continuing until some act of theirs changed their holding from the permissive nature to one of an adverse or hostile nature. * * *
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> * * * * * * *
>
> * * * To say that the old tenancy by will of the chief or konohiki became an adverse holding as soon as the chief or konohiki received his title to the land, and this without notice on the tenant's part that he held henceforth adversely, would give such person holding thereafter for twenty years, to all intents and purposes, as perfect a title to the land he held as if he had applied for and received a fee simple title therefor, and he thus be saved the expense of procuring such title. The law did not intend thus to favor those who slept upon their rights.

In a later case, which involved a claim by adverse possession on the part of the holder of a kuleana to a tract adjoining the kuleana, which he thought was covered by the kuleana award, the supreme court held that even assuming for the purposes of this case that the possession held by this claimant's predecessors in interest prior to the award of the ahupuaa within which the kuleana was contained was permissive, sufficient evidence had been adduced to justify the finding that possession thereafter became hostile and was under a claim of ownership and under such circumstances as to charge the true owner with notice of the adverse claim.[61] But if possession is once shown to have been permissive at its inception, it is presumed to continue permissive in the absence of any showing to the contrary, the burden being on the possessor to show that it thereafter became hostile.[62]

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[60] *Dowsett* v. *Maukeala,* 10 Haw. 166, 169, 171 (1895).

[61] *John Ii Estate* v. *Mele,* 15 Haw. 124, 126 (1903). The court stated (at pp. 125-126), with reference to the claim of plaintiff that upon the authority of *Dowsett* v. *Maukeala* (10 Haw. 166 (1895)) possession by the tenant under permission of the konohiki must be presumed to have continued permissive after the award of the title to the owner of the ahupuaa: "Whether the court held in *Dowsett v. Maukeala,* or whether the correct view is, that the possession of a kuleana-man prior to the sitting of the Land Commission must necessarily be held, *as matter of law,* to have been by permission of the konohiki, we need not say. The decision would seem to show on its face that there was *evidence* in that case that such permission had been in fact given; and in other essential respects the evidence in that case differed from that in the case at bar, for there the presiding judge instructed the jury that the occupation of the defendants had not been notorious, exclusive or continuous, and the evidence was that the land was unfenced and not definite in area or boundaries and that the defendants paid rent to the plaintiff within the statutory period. * * *"

[62] *Smith* v. *Hamakua Mill Co.,* 15 Haw. 648, 657 (1904). In *Smith* v. *Laamea,* 29 Haw. 750, 757-759 (1927), the Territorial supreme court upheld an instruction that if occupation of a lot within an ili originated in a permissive manner, nothing less than clear and explicit notice to the owner of the ili by word or act that the occupant intended to claim adversely could change the character of possession of the lot from a permissive to an adverse one, and after reviewing the authorities, stated (at p. 759): "A permissive occupant should not be allowed to change the character of the possession and acquire title by a mere secret, mental process."

Limitations Upon Landlord Titles in Favor of Tenants

It has been stated heretofore, in discussing "Awards of lands to the common people" (see p. 30), that sight was never lost of the fact that the tenants of the king and of the chiefs had rights that must be respected and protected, and that after the completion of the Mahele the land commission was empowered to award fee-simple titles to tenants who had occupied and improved lands of the government, the king, or any chief. If these were to be fee-simple titles, they must necessarily take precedence over the titles to the larger tracts within which they were situated, which already had been apportioned to the government, the king, and the konohikis.[63]

The rights of native tenants, then, could not be conveyed away from them by their landlords. It was held in two very early cases that the final titles of tenants who had been able to substantiate their claims to lands cultivated by themselves and had received awards from the land commission, were good as against royal patents of anterior date reserving the rights of tenants.[64] In the first of these cases, although it was not necessary to the decision, the court stated that the title of the kuleana holder—

> * * * was good against all the world. Moreover, said the Court, even if the King had not made this reservation, the plaintiff's title would be good; for the people's lands were secured to them by the Constitution and laws of the Kingdom, and no power can convey them away, not even that of royalty itself. The King cannot convey a greater title than he has, and if he grants lands without reserving the claims of tenants, the grantee must seek his remedy against the grantor, and not dispossess the people of their kalo patches.

In the second case a similar dictum appears, in commenting upon the fact that the royal patent of earlier date had contained a special reservation of the rights of tenants:

> The King did not convey Kukiiahu's rights to Gill; and if he had done so, his grant would have been a nullity. * * *

The supreme court has held[65] that title to a kuleana (cultivated land awarded to a tenant) by adverse possession on the part of the konohiki of the surrounding land must be based upon *"actual, visible,* notorious, distinct and hostile" possession[66] of the kuleana itself by the konohiki, otherwise

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[63] Justice Judd, in *Harris* v. *Carter,* 6 Haw. 195, 205 (1877), was careful to qualify his statement that the king's title to the ilis in litigation was perfect, and that the titles of those chiefs who had ilis in the same ahupuaas "maheled" to them were perfect so far as the king was concerned: "When I say that both these classes of titles are 'perfect,' I must always be understood as qualifying this by the statement that these maheles and subsequent awards were subject to the rights of native tenants. * * *"

The legislative act that confirmed the reservation of crown lands by the king and accepted those set apart to the government (Laws Haw. 1848, p. 22 (Rev. Laws Haw. 1925, Vol. II, p. 2152)) specifically provided that the lands of both classes were subject to the rights of tenants.

See footnote 34, *supra,* to the effect that a certain land commission award of a tract granted in the Mahele was stated by the supreme court to have contained "the usual exception" in favor of the kuleanas of the native tenants therein. (*In re Kakaako,* 30 Haw. 666, 668 (1928)).

[64] *Kekiekie* v. *Dennis,* 1 Haw. 42, 43 (69, 70) (1851); *Kukiiahu* v. *Gill,* 1 Haw. 54 (90, 91) (1851).

The supreme court has consistently recognized the principle that title to kuleanas within an ahupuaa did not pass with title to the ahupuaa. See, in addition to the other cases cited herein, *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.,* 20 Haw. 658, 665 (1911); *In re Title of Pa Pelekane,* 21 Haw. 175, 184-186 (1912); *McCandless* v. *Waiahole Water Co.,* 35 Haw. 314, 318-319 (1940).

[65] *Akowai* v. *Lupong,* 4 Haw. 259, 262 (1880).

[66] Citing *Manumanu and Mahuka* v. *Rickard,* 4 Haw. 207 (1879).

the statute of limitations does not run against the holder of an abandoned kuleana; that:

> The title for a kuleana under an award of the Land Commission or a royal patent is distinct, complete, and the general possession by the konohiki of the ili or ahupuaa in which it may be situated is not hostile to the owner of the kuleana.

This decision was relied upon by counsel in a much later case in which the kuleana was upon a public highway, the ahupuaa comprising only about 25 acres; but the court distinguished the circumstances thus:[67]

> This was not like a kuleana in a large ahupuaa over which cattle and horses of the konohiki would roam without attracting the attention of the owner of the kuleana. Moreover, the adverse possession in this case is not that of the konohiki but of one who claims to have purchased the land and that if she has failed to locate it as a portion of the ahupuaa she has acquired it by adverse possession.

Basis of Present Land Titles

Origin of Titles Summarized

The king, originally the owner of all land in the Islands, divided the lands into three groups (exclusive of certain parcels theretofore awarded or conveyed to individuals): (1) The lands in one group were released to certain chiefs, subject to the acquisition by such chiefs of private titles from the government; (2) those in another group were ceded to the government, and were known as government lands; and (3) those in the third group were reserved by the king as his own property, and were known as crown lands.

Present Title to Public Lands Is in the United States

Upon the formation of the Republic of Hawaii, title to all government lands not theretofore conveyed to individuals passed to the republic as successor of the kingdom. By constitutional declaration the republic assumed title to that portion of the public domain theretofore known as crown land. Title to "all public, government or crown lands" was conveyed by the republic to the United States by the treaty of annexation.

Derivation of Present Title to Privately-owned Lands

Present titles to privately-owned land in Hawaii are derived from:

(1) *The Mahele* or division of lands between the king and the chiefs or konohikis; confirmation of the claims of the latter, based upon the Mahele, in the form of awards of the land commission or subsequently of the minister of the interior; and the issuance by the minister of the interior of patents based upon the awards, upon payment of the government commutation, which gave allodial or fee-simple titles.

[67] *Kaae* v. *Richardson*, 18 Haw. 503, 506 (1907). Although evidence of adverse possession was considered to be slight, and it was not clear to the supreme court whether the trial judge regarded the evidence as showing title in the plaintiff by purchase or by prescription, both of which she claimed, that court did not feel at liberty to set aside the decision on the ground that there was not evidence of a prescriptive title.

(2) *The division between the king and the government* of lands not relinquished by the king to the chiefs; no further formalities being required in perfecting the king's title to the lands so reserved by him (crown lands); merging of the crown and government lands as all part of the public domain, with the establishment of the Republic of Hawaii, and cession of all public lands to the United States; and conveyance of crown and government or public lands to private individuals.

(3) *Awards of the land commission* of (a) titles less than allodial, to natives and foreigners, subject to commutation and acquisition of fee-simple titles; and (b) fee-simple titles to native tenants, without commutation, covering the lands cultivated by themselves and their house lots.

Evidence of Title

Titles to land in fee simple after the period of land reform were evidenced variously by patents in confirmation of awards, deeds of crown land from the king, and patents, grants, or deeds from the government.[68]

The Territory in 1903 adopted the Torrens system of land-court registration.[69] Application for registration is voluntary. Evidence of title is the owner's certificate of title issued in pursuance of a decree of registration which operates directly on the land and vests and establishes title thereto. Registered land on the Island of Oahu comprised 34 percent of the total area of the island at the beginning of 1939. The percentages on the other larger islands were still small at that time, although most of Lanai is within the system.[70]

Ancient Land Units to Which Water Rights Are Commonly Related

Title to land, however derived and however evidenced, carries with it the appurtenant water rights as well as other appurtenances. However, the character of existing rights to the use of water depends in great measure upon the character of the ancient land units, title to which may now be either in the government or in private individuals.

The "moku" was a geographical division of an island. For purposes of land tenure, the moku was further subdivided into "ahupuaas" and "ilis." Within these domains the lands were given designations based upon their usage. The term "kuleana" came in the course of the land reform to represent the tract of land awarded to a tenant. It is the ahupuaa, the ili, and the kuleana that are important to this discussion.[71]

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[68] See King, R. D., "Hawaiian Land Titles," op. cit., (footnote 1), pp. 42-43.

[69] Rev. Laws Haw. 1945, secs. 12600-12706.

[70] Mulholland, P. H., Registrar of the Land Court, "Land-Court Registration," First Progress Report, Territorial Planning Board of Hawaii (1939), pp. 45-48.

[71] The definitions herein are compiled principally from the following sources: Lyons, C. J., "Land Matters in Hawaii," The Islander, Vol. 1, Nos. 18 to 22 (1875); "Hawaiian Land Terms," Thrum's Hawaiian Annual, pp. 65-71 (1925); Alexander, Arthur C., "Land Titles and Surveys in Hawaii," Hawaiian Planters' Record, Vol. XXIII, No. 2 (1920); King, R. D., "Hawaiian Land Titles," op. cit. (footnote 1 herein), pp. 41-45 (1939); *In re Boundaries of Pulehunui*, 4 Haw. 239, 240-242 (1879); *Harris* v. *Carter*, 6 Haw. 195, 206-207 (1877); *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 379-381 (1930).

Ahupuaa

The ahupuaa may be taken for the present purpose as the primary division or unit of land.[72]

The ideal ahupuaa put into the possession of a chief by the king was a wedge-shaped tract of land radiating from the mountain top and extending with increasing width to the seashore, thus giving the landlord access to forests, wild birds, and running water, the use of arable land, and a section of the seashore for fishing—in other words, a share in all the natural resources of the island upon which the native economy depended. While this was the ideal arrangement, it was by no means carried out uniformly. Ahupuaas were of varying configuration, size, and relative location and differed markedly in utility and value. For example, they varied in size from less than 1,000 to 100,000 acres or more; some extended from the seashore into but not through the timber belt and were cut off by other ahupuaas from the main forest areas; some had no contact with the ocean; and others, though extending to the ocean, had only limited sea privileges and were excluded from the main fisheries by the extension of larger ahupuaas around them in the sea. Furthermore, as noted below, substantial portions of many ahupuaas (called ilis) were independent of the ahupuaa, thus depriving the chief of the ahupuaa of the revenue from those areas.

An ahupuaa might or might not include the entire drainage area of a stream; or the main stem of a stream system might cross two or more such land holdings on its way to the sea.

A decision of the supreme court thus summarized the characteristics of these early divisions:[73]

> With the Hawaiians, from prehistoric times, every portion of the land constituting these Islands was included in some division, larger or smaller, which had a name, and of which the boundaries were known to the people living thereon or in the neighborhood. Some persons were specially taught and made the repositories of this knowledge, and it was carefully delivered from father to son.
>
> The divisions of the lands were to a great extent made on rational lines, following a ridge, the bottom of a ravine or depression, but they were often without these and sometimes in disregard of them. Sometimes a stone or rock known to the aboriginals and notable from some tradition, or sacred uses, marks a corner or determines a line. The line of growth of a certain kind of tree, herb or grass, the habitat of a certain kind of bird, sometimes made a division. Through some parts of the country which must always have been unfrequented by the general population, as thick forests, rough and barren mountain lands, their division lines lay, when they could be traced out by some persons at least in charge of the territory, whose business it was to know them.
>
> A principle very largely obtaining in these divisions of territory was that a land should run from the sea to the mountains, thus affording to the chief and his people a fishery residence at the warm seaside, together with the products of the high lands, such as fuel, canoe timber, mountain birds, and the right of way to the same, and all the varied products of the intermediate land as

[72] "An Ahupuaa has been called the 'unit' of land in this country; but it is by no means a measure of area, for Ahupuaas vary exceedingly as to size. * * *" *Harris* v. *Carter*, 6 Haw. 195, 206 (1877).

[73] *In re Boundaries of Pulehunui*, 4 Haw. 239, 240-242 (1879).

might be suitable to the soil and climate of the different altitudes from sea soil to mountainside or top. But this mode of allotment had numerous exceptions, because some of the lands were for some reasons not always understood, and perhaps arbitrary in the beginning, very wide at the top, cutting off a great number of other lands from the mountain; others in like manner wide in the lowlands, cut off land from the sea.

The contour of lands which have been surveyed and plotted is most irregular. The only general description would be that the lines are not rectilinear, and that there is no preference for right angles. In size ahupuaas are found of from a hundred acres up to thousands, in several instances containing more than one hundred thousand and more than two hundred thousand acres.

Ili

The next subdivision below the ahupuaa was the ili. This term was used to designate either (1) a subdivision of an ahupuaa made by the konohiki himself for his own convenience, or (2) a tract reserved out of an ahupuaa and independent of the control of the konohiki of the ahupuaa.[74] Furthermore, some lands called ilis were apparently not part of any ahupuaa;[75] but in the usual case the ili seems to have been located within the geographical boundaries of an ahupuaa. Many ahupuaas contained within their boundaries independent ilis (ilis kupono)—that is, ilis reserved for the use of the king or of some other konohiki, and hence independent of the ahupuaa—some being of greater importance than the ahupuaa itself,[76] whereas other ahupuaas contained no ilis.

Ili of the Ahupuaa

This ili was a mere subdivision of the ahupuaa for the convenience of the chief, administered by a konohiki or agent appointed by the chief. Such an ili had no existence separate from that of the ahupuaa of which it formed an administrative part, and the transfer of the ahupuaa to a new chief carried with it the ilis of this character.

Ili Kupono

This is known also as ili ku, or independent ili. Such a tract might have been carved out of an ahupuaa by the king for his own use or for the use of some other konohiki, in which case it was independent (or nearly independent) of the ahupuaa and in general owed no tribute to the chief of the ahupuaa, but paid tribute to the king, to whom its konohiki was directly subservient. It is stated, however, that in cases a slight tribute was due to the ahupuaa chief. In some cases ilis kupono constituted the larger part of an ahupuaa; in other cases they may have been geographically

[74] "There are two kinds of Ilis. One, the Ili of the Ahupuaa, a mere subdivision of the Ahupuaa for the convenience of the chief holding the Ahupuaa, * * *. The Konohikis of such Iliainas as these brought their revenues to the chief holding the Ahupuaa.

"The other class were the 'Ili Kupono' (shortened into 'Ili Ku.') These were independent of the Ahupuaa, nor did they pay general tribute to it." *Harris* v. *Carter,* 6 Haw. 195, 206 (1877).

In another case it was stated: "We are not aware of a case of an Ili within an Ili, and we think it impossible." *Boundaries of Kapoino,* 8 Haw. 1, 3 (1889).

[75] "There are some Ilis that do not seem to be in any Ahupuaa—* * *." *Harris* v. *Carter,* 6 Haw. 195, 207 (1877). The "Ilis of Honolulu" were mentioned, as well as ilis awarded in certain other localities.

[76] "In some cases these Iliainas are very numerous, absorbing the larger part of the Ahupuaas. A well-known case is the Ahupuaa of 'Waimea,' Hawaii, of which the Ilis of 'Waikoloa' and 'Puukapu' form about nine-tenths." *Harris* v. *Carter,* 6 Haw. 195, 206-207 (1877). The water rights of this ahupuaa were in litigation in *Carter* v. *Territory,* 24 Haw. 47 (1917), discussed in the following chapter.

separate from any ahupuaa; but the political and economic status of an ili kupono appears to have been substantially the same, whether located within or outside an ahupuaa. An ili of this character had its own identity, and the transfer of the ahupuaa within the exterior boundaries of which it may have been located did not carry with it the ili kupono.

The essential feature of the ili kupono was that it was not subservient to the ahupuaa of which it formed a geographical part. This has had an important bearing upon both the titles to ilis kupono subsequently to the land reform[77] and the rights of the holders of title.[78]

The Territorial supreme court in a case decided in 1930 has had occasion to pass upon the status of an ili kupono with reference to water rights. It was stated:[79]

> Without some further and distinct authority than that cited by the appellant, we would not be justified in disturbing the long accepted view that an ili kupono, in the system of land tenures prevailing prior to the great mahele of 1845, was wholly independent of the ahupuaa within whose outer boundaries it was situated and that it owed no tribute to the konohiki of the ahupuaa and that its konohiki was subservient directly to the king. * * *

Accordingly the ilis kupono in litigation were held to be of not less degree and dignity than the ahupuaa within which they were located, but to require the same consideration in a question of water rights as would be accorded an ahupuaa.

The lands constituting an ili were not necessarily contiguous, but might consist of several parcels so located as to take advantage of different resources; for example, one parcel in the forest, one on cultivable dry land, one on irrigated land, and another on the seashore. A detached parcel of an ili was called a "lele" or jump. The same term was applied on various islands to the outlying portion of an ahupuaa.[80]

Kuleana

This term referred to a right of property or business interest pertaining to an individual. It came to mean a claim to a small tract of land within a larger tract claimed by another; and it is commonly used to designate the tract of cultivated land awarded to a native tenant by the land commission.

The water rights pertaining to kuleanas are an important feature of Hawaiian water law. The rights of landlords were subject in general to the rights of their tenants, and the water rights of the ahupuaas and ilis are therefore subject to those of the kuleanas within their boundaries.

The Effect of Land Commission Awards Upon Land Units Located Within the Units Awarded

Kuleanas

In the foregoing discussion of "Awards of lands to the common people" and "Limitations upon landlord titles in favor of tenants" it has

[77] This is discussed hereinafter in connection with "The effect of land commission awards upon land units located within the units awarded."

[78] It was held in *Shipman* v. *Nawahi*, 5 Haw. 571 (1886), that the owner of an ili kupono had a separate and independent title, not subservient to the ahupuaa by which it was surrounded, hence he was not a tenant of the owner of the ahupuaa and had no right of fishing as a *hoaaina* of the ahupuaa.

[79] *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 380-381 (1930). Affirmed, *Territory of Hawaii* v. *Gay*, 52 Fed. (2d) 356 (C. C. A., 9th, 1931); certiorari denied, 284 U. S. 677 (1931).

[80] *Horner* v. *Kumuliilii*, 10 Haw. 174, 176 (1895).

been shown that the rights and kuleanas of native tenants were protected in the land legislation and proceedings thereunder. That native kuleanas were not included in awards of ahupuaas or ilis within the boundaries of which they were located, was a matter of legislative and administrative policy, and apparently has never been a moot question of law. The fact that various tenants failed to assert their rights under the procedure provided for that purpose, and eventually lost them, does not alter the principle.

Konohiki Lands

Questions concerning the inclusion in ahupuaas and ilis of lands and interests other than those of native tenants have given some difficulty. Generally, when the outlying boundaries of an ahupuaa had been settled, whatever land was not shown to be of an ili, within the ahupuaa, belonged to the ahupuaa[81]—unless, of course, otherwise granted or reserved. Much of the contention over this matter in cases that have reached the supreme court seems to have been in connection with tracts that were awarded by name only.

Awards of Konohiki Lands by Name Only

The Act of June 19, 1852[82] authorized the land commission to award whole ahupuaas or ilis to konohikis to whom the lands had been granted by their proper names in the Mahele, without survey, except lands to be divided between two konohikis, or between the government and a konohiki, or between the government and the king, or any konohiki. This, the supreme court held in an early case, did not *require* the commission to grant such awards by name only; its effect "was merely to relax the previous law on the subject, so far as to permit the Land Commission to grant awards for whole ahupuaas and ilis, by their proper names, in those cases where surveys were not presented."[83] In the Act of August 23, 1862, providing for the appointment of a boundary commission to take evidence, survey lands, and fix boundaries, the minister of the interior was forbidden to issue any patent in confirmation of a land commission award "without the boundaries of the tract being defined in such patent" according to the decision of the boundary commissioners. This prohibition appears in the present statute as follows:[84]

> The commissioner of public lands is forbidden to issue any patent in confirmation of an award by name, made by the commissioners to quiet land titles, without the boundaries being defined in such patent, according to the decision of a commissioner of boundaries, or the supreme court, on appeal.

Same: The General Rule

The supreme court, in its decision rendered in 1879 in the *Pulehunui* case, called attention to the fact that the Mahele necessarily had been made without survey; that tracts known to Hawaiians as ahupuaas or ilis were awarded *by name* of the ahupuaa or ili to those entitled to them; and that:[85]

> By such grant was intended to be assigned whatever was included in such tract according to its boundaries as known and used from ancient times.

[81] *Boundaries of Kapoino,* 8 Haw. 1, 2 (1889).
[82] Laws Haw. 1852, p. 28 (Rev. Laws Haw. 1925, Vol. II, p. 2144).
[83] *In re Boundaries of Kewalo,* 3 Haw. 9, 15 (1866).
[84] Rev. Laws Haw. 1945, sec. 10205. Original statute: Laws Haw. 1862, pp. 27, 29, s. 10.
[85] *In re Boundaries of Pulehunui,* 4 Haw. 239, 240 (1879).

The general rule so stated in the *Pulehunui* case—that an award of a tract by name covers all that is included within its ancient boundaries—has been restated in several subsequent decisions.[86]

Same: Exceptions to the Rule

Exceptions to the general rule are noted in several decisions rendered prior to that in the *Pulehunui* case. One such decision acknowledged the general rule that the party holding an award or patent for an ahupuaa or ili is the owner of all land embraced within its boundaries, except such portions as had been awarded by the land commission to other persons, but held that the grant of an ahupuaa did not include a town lot previously granted to another.[87] Still another decision held that the award of an ili did not include house lots contained within it;[88] and another stated that while the grant of a tract of land described either by survey or in any other sufficiently definite mode, will be held to include all that is within its boundaries, the Mahele and award of an ahupuaa did not carry with it the ilis kupono (independent ilis) within its boundaries, unless clearly expressed or manifestly intended.[89] It was also held, in one of the very early decisions, that an award of a lot by metes and bounds did not extinguish a previously existing right of way across the lot, the claim for which right of way had not been adjudicated by the commission.[90]

The rule and its exceptions were considered in a land registration case decided in 1912, in which the court held that evidence is admissible to show that land, though originally a part of an ahupuaa that had been awarded by name only, had been permanently detached from the ahupuaa prior to the award and therefore was not included in the award of the ahupuaa.[91] Counsel had cited the *Pulehunui* case for the rule that an award or grant of an ahupuaa or ili by name would pass title to whatever was included in such tract according to its boundaries as known and used from ancient times. The court conceded the correctness of that principle as a general rule, but noted that exceptions were shown by the *Keelikolani, Kanaina,* and *Harris* cases noted above,[92] and that in the *Pulehunui* case there was no occasion to consider any exception to the rule. It was held that:

> Any admissible evidence which may be offered by the Territory tending to show that, within the principle of the cases referred to, Pa Pelekane, though originally a part of Paunau was not included in the award of that ahupuaa, should be received.

Awards by Metes and Bounds

The distinction between inclusion of units in awards by name only, and in those describing the awarded tract by metes and bounds, was emphasized in a decision rendered in 1928 construing a land commission award of a tract of land described therein by metes and bounds.[93] The Territory

[86] *Territory of Hawaii* v. *Liliuokalani,* 14 Haw. 88, 92 (1902); *In re Boundaries of Paunau,* 24 Haw. 546, 554 (1918); *Territory of Hawaii* v. *Gay,* 26 Haw. 382, 400 (1922); *Bishop* v. *Mahiko,* 35 Haw. 608, 654-655 (1940).

[87] *Keelikolani* v. *Robinson,* 2 Haw. 522, 548 (1862).

[88] *Kanaina* v. *Long,* 3 Haw. 332, 339 (1872).

[89] *Harris* v. *Carter,* 6 Haw. 195, 197, 207 (1877).

[90] *Jones* v. *Meek,* 2 Haw. 9, 12-13 (1857).

[91] *In re Title of Pa Pelekane,* 21 Haw. 175, 186 (1912).

[92] Cited in footnotes 87 to 89, inclusive.

[93] *In re Kakaako,* 30 Haw. 666 (1928).

claimed that two portions of the awarded tract, neither of which was expressly excepted from the award or patent, constituted together an ili or leles of an ili which fell to the portion of the king and therefore were not intended to pass by the award. The court stated (at pp. 674-675):

> There can be no doubt that an award of an ahupuaa by name only did not carry with it an award of an independent ili included within the outer boundaries of the ahupuaa. *Harris* v. *Carter,* 6 Haw. 195. The reason for this is plain and that is that the independent ili was not, under ancient Hawaiian customs and nomenclature, a part of the ahupuaa and its chief owed no allegiance to the konohiki of the ahupuaa, while a dependent ili, on the other hand, was a part of the ahupuaa and was under the dominion of the same chief or konohiki. * * * The situation is entirely different, however, when the award of the land commission is not of an ahupuaa or ili by name only, but is of the land situate within certain metes and bounds. The only meaning that the latter is susceptible of is that *all* of the land within those metes and bounds is intended to be awarded, excepting only as expressly reserved. See *Harris* v. *Carter, supra,* 197, and *Jones* v. *Meek,* 2 Haw. 9, 11. The award to Victoria excepted nothing other than the kuleanas of the natives. It did not except any part of land claimed by the government. It was all government land subject to award. There is no principle of ancient Hawaiian law that we are familiar with that would require or permit a construction that an award of land by metes and bounds does not carry with it a piece of government land within the outer boundaries set forth which it was within the power of the land commission at the time to award.

The court declined to go behind the commission's decision, as expressed in the award, "in this collateral proceeding" (at p. 677), and held that the award included the two tracts in dispute.

Relation of Land Commission Awards to Water Rights

The decisions of the land commission were required to be in accordance with civil code principles and native usages, which among other things related to "water privileges,"[94] but apparently the land commission did not generally, if at all, determine or award water rights specifically as such. It determined the claimant's kind and amount of title to land, to which appurtenances of various character attached as a matter of law, such questions to be determined from evidence found in the awards as well as elsewhere.

In *Peck* v. *Bailey,*[95] the earliest water-right case reported, the title of land held by both parties had been derived from the king and award of the land commission and conveyed to them in the usual form of a warranty deed, without any peculiar grants to either. The court stated:

> There can be no difference of opinion that the complainants were entitled to all the water rights which the lands had by prescription at the date of their title. By the deed, the water courses were conveyed and a right to the water accustomed to flow in them. The same principle applies to all the lands conveyed by the King, or awarded by the Land Commission. If any of the lands were entitled to water by immemorial usage, this right was included in the conveyance as an appurtenance. An easement appurtenant to land will pass by a grant of the land, without mention being made of the easement or the appurtenances. * * *

[94] Laws Haw. 1846, pp. 107, 109, s. 7 (Rev. Laws Haw. 1925, Vol. II, pp. 2120, 2123).
[95] 8 Haw. 658, 660-661 (1867).

That the land commission in its hearings and judgments was concerned with water disputes, as well as with controversies over other matters of land use bearing upon titles to land, was thought probable by the supreme court, according to a decision rendered within a few years after the commission had been dissolved.[96] The controversy was over a right of way across a lot awarded by the commission. Referring to the land commission, the court stated:

> Their main business was to adjudicate upon titles to land; but a claim to a right of way merely, which gives no title to the soil, but only a right to pass over it, is not, properly speaking, a claim for land. Undoubtedly the Board of Land Commissioners did, incidently, adjust and settle, in many cases, disputes in regard to rights of way, rights of piscary, and water privileges; and had the parties in this instance submitted the claim for a right of way to the adjudication of the Board, as incident to the settlement of their land claims, we think its decision would have been binding. * * *[97]

It is hardly likely that the land commission could have escaped careful consideration of water rights, in view of the statutory direction concerning "water privileges" and the necessity for using water in the cultivation of much of the kalo (taro) land. The water right for kalo land was the result of ancient custom and undoubtedly was intended to pass to the successful claimant of irrigated land, even without express mention in the award. The fact that an award of kuleana land said nothing about appurtenant water rights is apparently of no importance; the title to the kuleana is derived from the award, and the water right is traceable to the ancient custom of irrigating such land. Concerning this the supreme court stated in *Carter* v. *Territory of Hawaii,*[98] a leading water-rights decision rendered in 1917:

> We are not prepared to say that in no case did the land commission, in making an award of title to land, expressly mention water rights, but in most cases at least no such mention was made even where such rights were undoubtedly intended to pass. Of course where a *kuleana* was described in an award as kalo or loi land it would be evidence that the land was entitled by ancient custom to a supply of water for the cultivation of wet land taro, and the lack of such description would probably be evidence to the contrary, though not conclusive. * * *

In this case counsel for one of the parties had drawn a distinction between awards of land made by and through the land commission, which it was conceded passed water rights by implication, and direct grants. However, the court stated (at p. 64) that the right to water in accordance with ancient custom, from ancient ditches that had become incorporated into the permanent topography of the country, passed with the conveyance of the land as an incident, even though the land passed by public grant, and that:

> Like the rights which passed to lands awarded by the land commission, it was a right to such quantity of water as was customarily used on the land at and immediately before the date of the grant so long as that quantity continued to be available. * * *

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[96] *Jones* v. *Meek,* 2 Haw. 9, 12 (1857).

[97] In the recent case of *Bishop* v. *Mahiko,* 35 Haw. 608, 656 (1940), which involved title to a fishery, the court stated, citing *Jones* v. *Meek:* "The land commission, similarly as in the case of private fisheries, was without jurisdiction to award easements, except as they might incidentally come in question."

[98] 24 Haw. 47, 58-59 (1917).

Chapter 4

SURFACE-WATER RIGHTS

Basis of the Present System

The Territorial Supreme Court has stated that:[1]

> Our system of water rights is based upon and is the outgrowth of ancient Hawaiian customs and the methods of Hawaiians in dealing with the subject of water. * * *

Recognition of that fundamental fact is to be found throughout the reported decisions of the supreme court under the several governments of the Islands. The system, therefore, is not based upon the common law[2] or the civil law or the doctrine of prior appropriation;[3] it is the crystallization into legal form of customs that were developed among the natives before the coming of the white man. These customs, therefore, are truly of ancient origin and they necessarily long antedated any written legislation on the subject of water.

As the rights to use water are derived primarily from ancient customs relating to ownership and usage, there is no administrative procedure under which one may acquire a water right, comparable to the procedure under which appropriative rights are acquired in the Western States. In Hawaii, the right to unused water inheres in the ownership of the original units of land—ahupuaas and ilis—not in the public; the government holds water rights incident to its lands, just as does an individual.[4] Nor is there administrative control over the distribution of water to those entitled to receive it, comparable to the State systems for the administration of rights and distribution of water. There is a special statutory procedure, however, for the settlement of water controversies, in addition to the general equity procedure, which affords an alternative method of adjudicating water rights as between parties to a controversy.

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[1] *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 395 (1930).

[2] While it is assuredly correct to say that the present system is not based upon the common law, the common law has been the basis of a partial adoption of the riparian doctrine in Hawaii, as noted below, p. 86 and following.

[3] "* * * The law of priority of appropriation which prevails in the arid sections of the mainland of the United States has never been recognized in this jurisdiction. * * *" *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 57 (1917).

[4] For various enactments, extant and obsolete, concerning government-owned waters, see: Prohibition, sale of certain water sources, Rev. Laws Haw. 1945, sec. 4530 (Laws 1853, p. 64 (included in Rev. Laws 1925, Vol. II, p. 2183), as am.). Investigation and settlement, title to Territorial water rights, Laws 1921, Acts 122, 231 (included in Rev. Laws 1925, Vol. II, p. 2248). Fixing reasonable rates, domestic water supplied under leases from Territory, Rev. Laws 1945, secs. 4722, 4723. Development, acquisition, and use of water, Hawaiian home lands, 42 Stat. L. 108, ch. 42, secs. 220 as am., 221 (included in Rev. Laws 1945, pp. 69-70). Water supply, Lualualei homesteads, Laws 1921, Act 231, am. Laws 1923, Act 186 (included in Rev. Laws 1925, Vol. II, pp. 2248-2249); now Hawaiian home lands, 42 Stat. L. 108, ch. 42, secs. 203, 204 as am. (included in Rev. Laws 1945, pp. 59-62), and note to sec. 220 in Rev. Laws 1945, p. 69. Molokai Water Board, Rev. Laws 1945, secs. 12951-12960 (Laws 1943, Ser. A-46, Act 227; see also Laws Sp. Sess. 1941, Ser. E-82, Act 69, am. Ser. E-83, Act 96). Other statutes, Island of Molokai: Settlers on Hawaiian home lands, Laws 1923, Act 90 (included in Rev. Laws 1925, Vol. II, p. 1961); completion U.S.B.R. survey, Laws 1937, Ser. E-240, Act 121; water commission, Laws 1939, Ser. B-76, Act 248, repealed by Laws Sp. Sess. 1941, Ser. B-31, Act 85, and Laws 1941, Ser. E-290, Act 201, repealed by Laws Sp. Sess. 1941, Ser. E-84, Act 74.

The principles that govern rights to the use of surface waters have been established mainly in a rather large number of reported court decisions beginning with *Peck* v. *Bailey*[5] in 1867. There is no great body of statutory law governing rights to the use of surface waters. In the discussion of the Hawaiian system of land titles, in chapter 3, reference has been made to the laws of 1839, which included a provision that water for irrigation should be allotted to parcels of land in proportion to the taxes paid (see pp. 22-23); to the act creating the land commission, which provided that the decisions of the commission should be in accordance with existing principles and native usages relating, among other things, to "water privileges" (see p. 24); and to the resolutions of the privy council, confirmed by the legislature in 1850, concerning the right of the people to take water (see p. 31). This right of the people to take water, defined in 1850, is still the subject of extant legislative provision and has been interpreted by the supreme court, as noted below in connection with the rights of occupants of ahupuaas (see p. 100). The water-rights enactment of most practical and far-reaching consequence is that which provides for the settlement of water controversies, noted below (see p. 50); and the decisions of the supreme court on appeal from these determinations, and on appeal in equity cases, form the largest part of the Hawaiian law of surface waters. Legislation relating to artesian waters is discussed in chapter 5. The statutes cited herein are listed in the appendix.

Establishment of Water Rights and Settlement of Controversies over Water

Water rights in Hawaii have been established in the course of controversies[6] over water, in proceedings originating in tribunals from which appeals could be and in many instances have been taken to the supreme court; and the decrees in such controversies have had the effect of adjudicating the water rights so established.

In the *Palolo Land & Improvement Company* case, cited in the preceding footnote 6, a petition had been presented to the commissioner of private ways and water rights, alleging that the petitioner was the owner of certain lands and entitled to use all the surplus water of such lands, and asking to be allowed to use all the surplus water as it saw fit. This suit, the supreme court held, could be sustained, if at all, only as analogous to a suit in equity to quiet title or remove a cloud or a statutory action to quiet title; but allegations necessary to sustain even such a suit were wanting. All water rights determined as the result of suits that have reached the supreme court have been established in controversies between claimants, either under the statutory procedure described under "Commissioners of private ways and water rights," below, or in suits at law or in equity, and not in suits to quiet title.

[5] 8 Haw. 658 (1867).

[6] The statute relating to controversies before a commissioner of private ways and water rights (see p. 50, below) does not contemplate a proceeding in the nature of a proceeding in rem by one claiming to be the owner of certain waters, to have himself declared such as the ultimate object sought, and not incidentally or intermediately for the purpose of obtaining some definite relief from the acts or omissions of others: *Palolo Land & Improvement Co.* v. *Territory of Hawaii*, 18 Haw. 30, 33 (1906).

Throughout the period of land reform it was implicit that water privileges should go hand in hand with other privileges of land use. The land commission was directed by the statute that created it to make its decisions in accordance with civil-code principles regarding the occupancy and use of land, specifically relating, among other things, to "water privileges" (see p. 24, above). The land commission apparently made few, if any, awards of water privileges as such; but in making its awards of land the commission undoubtedly must have given full consideration to appurtenant water privileges and intended them to pass with the awarded lands as appurtenances.[7] (See pp. 45-46, above.)

Water rights have been established and controversies over their exercise have been settled (1) in the special statutory proceedings before commissioners of water rights, whose duties are now performed by the circuit judges sitting as commissioners, described below; (2) before the circuit judges at chambers sitting as courts of equity; and (3) before the circuit courts in actions at law for damages.

A statute provides that the district courts "shall not have cognizance of real actions, nor actions in which the title to real estate shall come in question, * * *."[8] It was held in an action brought in a district court for trespass that title to an easement—a water right—is a title to real estate within the meaning of the statute, and that a plea to the jurisdiction on this ground was good.[9] This principle was approved and applied in a subsequent action brought in a district court for damages for trespass in interfering with the flow of water to which plaintiff claimed the right; a plea to the jurisdiction being held good, where it put in issue that plaintiff had no title to the water in question, that defendant had title by prescription, and that defendant had title as a riparian owner.[10] The court stated that all similar actions for trespass that involve or may involve the question of title to real estate, should be brought in the first instance in the circuit court.

In an early case a commissioner of boundaries included in his decision, as to the boundaries between adjoining lands, a statement that the right to the water of certain springs be equally divided between the two lands.[11] This, the supreme court held, he had no right to do. The court stated further that if the spring lay on one side of the boundary so fixed, and if the owner of the land on the opposite side thought he had a right in that spring, he must establish it in a court of law if the owner of the land on which the spring lay should object, and not in this boundary adjustment proceeding.

[7] See *Carter* v. *Territory of Hawaii,* 24 Haw. 47, 58-59, 64 (1917); *Jones* v. *Meek,* 2 Haw. 9, 12 (1857); *Peck* v. *Bailey,* 8 Haw. 658, 660-661 (1867). See also *Bishop* v. *Mahiko,* 35 Haw. 608, 656 (1940).

[8] Rev. Laws Haw. 1945, sec. 9674.

[9] *Kaneohe Ranch Co.* v. *Ah On,* 11 Haw. 275, 276 (1898).

[10] *Brown* v. *Koloa Sugar Co.,* 12 Haw. 409, 412, 415 (1900).

[11] *Board of Education* v. *Bailey,* 3 Haw. 702, 704 (1876).

Commissioners of Private Ways and Water Rights

As land titles came to be established and security in land tenure began generally to prevail, it was inevitable that controversies over the use of water in connection with such land should develop. The need for security in water titles, where the use of irrigated land was concerned, became increasingly apparent and important. Accordingly the legislature in 1860[12] amended a statute[13] which had provided for commissioners to hear and determine all controversies respecting rights of way, by giving such commissioners power to hear and determine all controversies respecting rights in water. These officials were called "Commissioners of Private Ways and Water Privileges." In 1868 and 1878 the law was further amended.[14] In 1886 it was completely reenacted, being substantially enlarged and containing more details of procedure; and at the session of 1888 it was again reenacted, one "Commissioner of Private Ways and Water Rights" being provided for in each election district instead of three, as formerly.[15] Finally, in 1907, the entire statute was again reenacted, it being provided that the term "Commissioner" when used in the act should refer to the judge of the circuit court within which the property affected should be situated; thus giving the circuit judges (rather than appointed commissioners) jurisdiction over rights of private ways and water rights in controversies arising under the statute.[16]

The act as now in force appears in Revised Laws of Hawaii, 1945, sections 10218 to 10224, inclusive. It is the duty of the judges, within their respective circuits, to hear and determine all controversies respecting rights of private ways and water rights, between private individuals, or between private individuals and the Territory (sec. 10220). "Private individuals or persons" shall mean either individuals, companies or corporations, or any others except the Territory (sec. 10218). Any person interested, or the Territory, may apply for a settlement of any rights involved under the statute. Summons is to be served personally upon each landowner or occupant having an interest in the controversy; and if the owner or occupant cannot be found, notice of the hearing is to be given by posting upon the premises of which the owner or occupant cannot be found, or by publication, as the judge shall direct. (Sec. 10220.) It is required that the judge shall hear the evidence; shall, as far as possible, ascertain the rights of absent parties not served, where notice has been published; may, if deemed desirable or conclusive to the rendering of a correct decision, visit the

[12] Laws Haw. 1860, p. 12 (August 28, 1860), amending the title of Article 44, Chapter 16, Civil Code of Hawaii 1859, and secs. 996, 997, and 1001 under Chapter 16. The former title "Of the Settlement of Controversies Respecting Rights of Way" was changed to read: "Of the Settlement of Controversies Respecting Rights of Way and Rights of Water."

[13] The statute was originally enacted as Laws Haw. 1856, p. 16, which became secs. 996-1003 of Civ. Code Haw. 1859. The amendment of 1860 related to the Civil Code provisions, as stated in footnote 12.

[14] Laws Haw. 1868, act of May 13, 1868; Laws Haw. 1878, ch. 19.

[15] Laws Haw. 1886, ch. 69; Laws Haw. 1888, ch. 26.

[16] Sess. Laws Haw. 1907, Act 56 (April 12, 1907). In form, this act amended sections 2199 to 2205, inclusive, of the Revised Laws of Hawaii of 1905, which were based upon the reenactment of 1888.

locality of the controversy; and "shall give such decision as may in each particular case appear to be in conformity with vested rights and shall be just and equitable between the parties." The decision shall state expressly the findings of fact on the evidence, and (sec. 10221):

> * * * if on a water right, it shall state the proportion of time for use, and any other things necessary to the right. It may also regulate the methods by which water may be obtained, and by which its supply can be controlled. * * *

The decisions are final and binding upon all parties before the court in the controversy, except those absent from the Territory without a legal representative therein during the whole time of pendency of the controversy, subject to the right of appeal (sec. 10221). Appeal may be taken to the supreme court, which may permit the introduction of new evidence that could not with due diligence have been obtained before (sec. 10223). The judges have power to exercise the same authority in regard to their special jurisdiction as is conferred upon circuit judges at chambers (sec. 10224).

Jurisdiction of Commissioners of Water Rights

Now Vested in Circuit Judges Sitting as Commissioners

The present statute does not use the term "Commissioner," except to define it as referring to the circuit judge in these special statutory proceedings; but the supreme court decisions on appeal in such proceedings refer to the judges as commissioners, or commissioners of water rights, in order to differentiate their functions in controversies arising under the special statute, from those involved in water-right cases arising in equity. Jurisdiction in the statutory controversies was simply transferred by the statute of 1907 from persons (not circuit judges) appointed as commissioners of private ways and water rights, to the circuit judges sitting as commissioners of water rights; the jurisdictional principles remaining otherwise the same.[17]

A Controversy Must Appear

The jurisdiction of the commissioners extends to the settling of controversies over water rights; and a controversy clearly develops when the defendant comes in on the summons and joins issue on the claim of the plaintiff.[18] An action to prevent the obstruction of the flow of water from defendant's kuleana to that of plaintiff, which flow was customary, is a controversy respecting water rights over which the commissioner has jurisdiction.[19] The defendant in the *Wailuku* case, just cited, had urged on appeal

[17] *Territory of Hawaii* v. *Gay,* 32 Haw. 404, 412 (1932).

A point of qualification of the commissioner was involved in *Wailuku Sugar Co.* v. *Kaiue,* 8 Haw. 537 (1892). The supreme court held (p. 539-540) that a special commissioner, who had been appointed pursuant to the statute of 1888 because of the disqualification of the regular commissioner, had jurisdiction from the moment he accepted the appointment, to the exclusion of the regular commissioner; and that the regular commissioner could not resume jurisdiction of the case upon the removal of his disqualification.

[18] *Davis* v. *Afong,* 5 Haw. 216, 217 (1884).

[19] *Wailuku Sugar Co.* v. *Hale,* 11 Haw. 475, 476-477 (1898).

It was held, on demurrer, in *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.,* 20 Haw. 658, 665-666 (1911), that the existence of a controversy is clearly alleged, where it is averred that petitioner is the owner of and entitled to all the water of a stream in an ahupuaa except a definitely named quantity, and that respondents are wrongfully diverting more than that quantity against protest and under claim of right.

that this appeared to be a petition for the opening of a right of way of plaintiff's water through defendant's land and not a dispute as to any water.

The jurisdiction of the commissioners, therefore, does not attach to a mere *ex parte* proceeding. In *Davis* v. *Afong*[20] the court referred to a then recent case, not reported, which had been dismissed for want of jurisdiction, in which one party had applied for a determination of his rights but without setting forth a claim as against other parties, and in which the commissioners had proceeded to adjudicate his rights to water without making other persons, whose rights were claimed to be affected, parties to the adjudication. This, the court held, failed to disclose any "controversy" between plaintiff and other parties. Reference has been made above (see p. 48 and footnote 6) to the decision in *Palolo Land & Improvement Co.* v. *Territory of Hawaii*,[21] in which there was simply an allegation of ownership of land and surplus water and a prayer that the petitioner be allowed to use all the surplus water as it saw fit, and no allegation that a controversy existed or that other persons were interested or hostile to petitioner's claims or concerning the use or the proposed use of water. This petition was ordered dismissed for want of sufficiency in the petition and notice.

Parties

The statute provides that any person interested, or the Territory, may apply for a settlement of water rights, and that service of process shall be made upon each owner or occupant of land having an interest in the controversy.[22]

> In water right controversies, as in actions generally, the plaintiff must show his right of action. * * *[23]

In an action brought to prevent the obstruction of flow of water from defendant's kuleana to that of plaintiff, defendant contended on appeal that plaintiff had failed to prove his title to the kuleana to which the water was appurtenant and that such failure should be held to defeat his right of action.[24] It was held, however, that plaintiff had proved occupancy of the land and planting in sugar cane, and actual and undisturbed possession under color of title; this being all that is essential to entitle a party to bring a petition as a party "interested."

It has been held, on demurrer, that the lessors of the petitioner were proper, even though not indispensable, parties defendant, where under the

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[20] 5 Haw. 216, 217 (1884).

[21] 18 Haw. 30 (1906).

[22] Rev. Laws Haw. 1945, sec. 10220. It is provided in sec. 10218, in defining terms used in the act, that " 'Private individuals or persons' shall mean either individuals, companies or corporations, or any others except the Territory."

[23] *Long* v. *Wai Fong*, 9 Haw. 628, 630 (1895). In this case plaintiff's grantor of a water right had already leased one-half of the water, the lease containing a recital that the other half was already leased to another party, and the lease had not expired. It was held that as the grantee was merely the reversioner of the water right, her right to sue was limited to injuries to the inheritance, and not to the present diversion of the water from her use by the lessees. See also *Kaleiopu* v. *Booth*, 10 Haw. 453, 455 (1896).

[24] *Wailuku Sugar Co.* v. *Hale*, 11 Haw. 475, 477 (1898).

allegations of the petition they held the reversionary interest in the ahupuaa and therefore had an interest in the controversy.[25] A claim to the water diverted might be proved to be good as against the holders of the reversionary interest, and the statute directs that summons be served upon interested parties. It was held in an equity case involving water rights that a bill is not demurrable on the ground that a person against whom no relief is sought and who, upon the allegations, asserts no right adverse to the plaintiff, has not been made a party; such person is not a necessary party.[26]

Formalities in Proceedings

The statute sets out details of procedure, which obviously must be followed in order that jurisdiction shall attach and the decree be given effect. It has been held by the supreme court that these statutory proceedings, before a circuit judge sitting as successor to the commissioner, were intended by the legislature to be simple, expeditious, and inexpensive, and that it was not intended that the formal procedure of equity should prevail; so that some omissions in the allegations that might be fatal in an equity proceeding would not necessarily be ground for demurrer in the commissioner proceedings.[27] However, while water commissioners no doubt should not be held to undue strictness in their proceedings, "there are limits beyond which they should not go," such as the acceptance of and action upon a petition clearly insufficient to vest jurisdiction.[28]

Evidence

The statute provides that the judge (commissioner) shall hear the evidence offered relative to the controversy and, if deemed desirable or conclusive to the rendering of a correct decision, may visit the locality where the controversy arose.[29] Various decisions of the supreme court in appeals in these cases indicate that the premises were visited in the course of the proceedings.

The commissioner's decision must be based upon evidence,[30] and must be set aside where the evidence merely shows the opinions of witnesses as to the rights of the parties;[31] or where the commissioner makes an order allowing the petitioner water for a certain time each day, in a controversy in which the record discloses no evidence upon which to base a finding as to the quantity of water to which the petitioner is entitled, if any;[32] or where

[25] *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.*, 20 Haw. 658, 664-665 (1911).

[26] *McBryde Sugar Co.* v. *Koloa Sugar Co.*, 19 Haw. 106, 119 (1908).

[27] *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.*, 20 Haw. 658, 667-668 (1911).

[28] *Palolo Land & Improvement Co.* v. *Territory of Hawaii*, 18 Haw. 30, 33 (1906). A judgment signed by only one of the commissioners, under the former law which provided for a board of 3 commissioners in each district, was held void: *Maikai* v. *A. Hastings & Co.*, 5 Haw. 1 (1883).

[29] Rev. Laws Haw. 1945, sec. 10221.

[30] *Wailuku Sugar Co.* v. *Widemann*, 6 Haw. 185, 187-188 (1876). See also *Hilo Boarding School* v. *Territory of Hawaii*, 23 Haw. 595, 601-602 (1917).

[31] *Appeal of A. S. Cleghorn*, 3 Haw. 216, 218 (1870).

[32] *Kaleiopu* v. *Booth*, 10 Haw. 453, 455 (1896). See also *Kohala Sugar Co.* v. *Wight*, 11 Haw. 644, 645 (1899).

the evidence fails to support a finding as to the physical conditions at a dam, and an order concerning the division of water from a stream.[33] Furthermore, decisions on particular points in a given controversy have been affirmed, while decisions on other points have been set aside if unsupported by the evidence—for example, an order that seepage and surplus waters from irrigated lands be returned into a stream above a certain dam, instead of being allowed to pass to adjacent lands claimed to be entitled to such seepage and overflow and thence partly to each of two streams.[34] In this last-cited example, the point was left undetermined, but without prejudice.

Evidence as to specific quantities of water is often very meager and on the whole unsatisfactory; and evidence as to quantities of water diverted at the time the early land awards were made is necessarily circumstantial in character and is frequently conflicting. The decision in a particular controversy must be based upon the best testimony presented, and will be upheld if supported by substantial evidence (considering the character of the evidence submitted) and if not inherently inequitable.[35]

Kamaaina Testimony

A controlling principle of Hawaiian water law is the establishment, protection, and preservation of rights to the use of water based upon ancient and immemorial custom. The existence and extent of a particular privilege or custom, then, has been established by the testimony of witnesses, notably by "kamaaina" or "old-timer" testimony.[36] In view of the importance of long-established custom and individual use of water in the determination of rights, and the general absence of written records prior to the Mahele, kamaaina testimony was often the only available evidence in the settlement of water controversies during the latter half of the nineteenth century and necessarily has been accorded great weight.

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[33] *Chun Lai* v. *Mang Young,* 10 Haw. 133, 134 (1895).

[34] *Palolo Land & Improvement Co.* v. *Wong Quai,* 15 Haw. 554, 567 (1904).

[35] *Hilo Boarding School* v. *Territory of Hawaii,* 23 Haw. 595, 601-602 (1917). The decision of the commissioner in this case that petitioner was entitled to divert the specific quantity of 5,590,000 g.p.d. from a stream was based upon very unsatisfactory evidence, but which apparently was the only evidence available. It was conceded that a water right passed with an award of land, but there was no evidence as to the quantity of water covered by the original right and no reason to believe that the right was then defined by specific quantity or proportion of stream flow. So far as the evidence disclosed, the right that passed as appurtenant to the land was to divert as much water as could be taken by the means used, less whatever water, if any, belonged to other lands. There was no evidence of measurements made in the ditch or stream until recent years, and evidence as to the former flow in the ditch was very conflicting. One measurement, made at a point where the ditch discharged into a gulch and was taken out below with the use of a loose stone dam, showed 3,190,000 g.p.d. flowing through or over the dam and 2,400,000 g.p.d. continuing down the ditch, there being no testimony as to any other water in the gulch; and the petitioner was awarded the right to divert from the stream 5,590,000 g.p.d., which is the sum of these figures. A flow of 1 million g.p.d. coming down the gulch was measured about a month after this date, and a flow of 11 million g.p.d. through the ditch intake had been measured 16 years earlier. The supreme court admitted the unsatisfactory state of the evidence, but upheld the decision as not contrary to the weight of evidence or inherently inequitable.

[36] In *In re Boundaries of Pulehunui,* 4 Haw. 239, 245 (1879), a controversy over the boundaries of an ahupuaa, the supreme court stated:

"We use the word 'kamaaina' above without translation in our investigation of ancient boundaries, water rights, etc. A good definition of it would be to say that it indicates such a person as the above witness describes himself to be, a person familiar from childhood with any locality."

In *Palolo Land & Improvement Co.* v. *Wong Quai,* 15 Haw. 554, 564 (1904), the court referred to a suit that had been decided in 1884 concerning a dam and ditch again in controversy, and stated that while the decision would not be binding on those not made parties, "Yet the decision should be given effect as far as possible, for it was rendered at a time when more kamaaina testimony was available. * * *"

Force of Commissioners' Decrees

The supreme court, in deciding the first reported appeal from a decision of the commissioners with respect to water rights,[37] held the duties of the commissioners to be of a judicial nature, requiring them first to hear and then to determine. When jurisdiction has attached, it was held, the commissioners' awards or decrees have force with reference to the parties, both those who have had notice and those who appear of their own accord.

While such a decision is binding on all who are parties and on their privies, it is not binding on others.[38] Those who were not parties to controversies before the commissioners, and who had no notice of hearing, did not come within their jurisdiction or become affected by their decisions.[39] The supreme court pointed out in one of the early cases[40] the difficulty of settling a controversy as among certain water users, where all who have rights of use from the same stream are not made parties; that while the commissioners have jurisdiction to make decisions that appear to them "just and equitable," it would be difficult to do justice unless all whose rights were affected were made parties and subjected to their jurisdiction. Years later, in an appeal in a proceeding brought for the settlement of the water rights of all the "wet lands" in Palolo Valley, Oahu,[41] there were involved certain rights that had been adjudicated in an early commissioner decision.[42] The supreme court stated that that decision necessarily was not binding on those who had not been made parties, and that there had been only one party defendant and no attempt to bind others by service by publication; yet felt that the decision should be given effect as far as possible in connection with the present controversy because it had been rendered at a time when more kamaaina testimony was available.

It was pointed out in a decision in a suit in equity,[43]—but with reference to a previous decision rendered on an appeal from a commissioner decision,[44]—that a judgment or decree does not always bind co-defendants as against each other, but that it does when they are adversary to each other.

Jurisdiction of Supreme Court on Appeal from Commissioner Decisions

The supreme court has only appellate jurisdiction from decisions of the commissioners, and it is not its province to complete on appeal a decision lacking in completeness.[45]

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[37] *Appeal of A. S. Cleghorn,* 3 Haw. 216, 218 (1870).

[38] *Palolo Land & Improvent Co.* v. *Wong Quai,* 15 Haw. 554, 564 (1904).

[39] *Appeal of A. S. Cleghorn,* 3 Haw. 216, 218 (1870).

[40] *Liliuokalani* v. *Pang Sam,* 5 Haw. 13, 14 (1883).

[41] *Palolo Land & Improvement Co.* v. *Wong Quai,* 15 Haw. 554, 563-564 (1904); rehearing denied, 16 Haw. 52 (1904).

[42] Appeals therefrom reported in *Loo Chit Sam* v. *Wong Kim,* 5 Haw. 130 (1884) and 5 Haw. 200 (1884).

[43] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 14 Haw. 50, 52 (1902).

[44] *Lonoaea* v. *Wailuku Sugar Co.,* 9 Haw. 651 (1895).

[45] *Loo Chit Sam* v. *Wong Kim,* 5 Haw. 130, 132 (1884).

It was stated, in a decision on appeal from a commissioner decision, to be understood by the supreme court that the merits of the whole controversy were open upon the evidence sent up and the law involved, and that the supreme court was authorized to render such judgment as should be just and equitable between the parties.[46] The decision of the comissioners, while it must be just and equitable, must not be contrary to well-settled principles of law; and the supreme court has the same jurisdiction on appeal.[47]

The statute authorizes the supreme court on appeal to permit "the introduction of new evidence which could not with due diligence have been obtained before."[48] Prior to the addition of the clause "which could not with due diligence have been obtained before," the supreme court had held that the introduction of new evidence was not limited to newly-discovered evidence nor to the evidence of fresh witnesses, but that it did not refer to a repetition of what had been said and recorded at the trial.[49]

Decisions of commissioners based upon insufficient testimony will be set aside.[50]

The rule with respect to the findings of the commissioner based upon conflicting testimony has been stated as follows:[51]

> We hold the rule to be, in an appeal in a water controversy, that where a question of fact depends on conflicting testimony, the finding of the commissioner ought not to be disturbed if it is supported by substantial evidence and does not appear to be contrary to the weight of the evidence taken as a whole, or inherently inequitable. * * *

It has been held that in an appeal in a water-rights case the power to apportion costs vests in the supreme court on appeal as fully as in the commissioner at the trial; such costs to be apportioned in accordance with the requirements of justice in view of the circumstances of the controversy.[52]

Jurisdiction of Commissioners Concurrent with that of Courts of Equity

The rule that the jurisdiction of a commissioner of water rights is not exclusive in the determination of a controversy respecting water rights, was stated in *Wailuku Sugar Co.* v. *Cornwell.*[53] This decision was rendered before the passage of the act[54] transferring the duties of the commissioners

[46] *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 652 (1895). See also *Wailuku Sugar Co.* v. *Widemann*, 6 Haw. 185, 187-188 (1876).

[47] *Achi* v. *Poni*, 5 Haw. 176, 178 (1884). This case involved a controversy over a right of way.

[48] Rev. Laws Haw. 1945, sec. 10223.

[49] *Davis* v. *Afong*, 5 Haw. 216, 219 (1884).

[50] *Wailuku Sugar Co.* v. *Widemann*, 6 Haw. 185, 187-188 (1876); *Kaleiopu* v. *Booth*, 10 Haw. 453, 455 (1896); *Kohala Sugar Co.* v. *Wight*, 11 Haw. 644, 645 (1899).

[51] *Hilo Boarding School* v. *Territory of Hawaii*, 23 Haw. 595, 601-602 (1917). Approved and followed in *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 53 (1917).

[52] *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.*, 21 Haw. 280, 282 (1912).

[53] 10 Haw. 476, 477-480 (1896). Also see *Henry Waterhouse Trust Co.* v. *King*, 33 Haw. 1, 17 (1934); rehearing denied, 33 Haw. 86 (1934).

[54] Sess. Laws Haw. 1907, Act 56; Rev. Laws Haw. 1945, sec. 10219.

to the judges of the circuit courts. It was stated that the statute respecting the determination of water controversies is affirmative only and does not destroy the jurisdiction in equity; that jurisdiction in equity, in a proper case for equity, exists concurrently with the jurisdiction of the commissioners where controversies respecting water rights are involved. Furthermore, the judges of the circuit courts of the several circuits have concurrent jurisdiction in equity with each other, irrespective of the place of residence of either party or the situation of the *res* involved; and the first court that obtained jurisdiction would retain it.

The rule so stated was approved in a decision rendered during the year following the passage of the act transferring the jurisdiction of the commissioners to the circuit judges.[55] It was stated that equity had disposed of numerous important water controversies in Hawaii in which questions of legal right were passed upon; that it was not the intention of the legislature that general equity jurisdiction should be so superseded; that a water controversy may involve equitable as well as legal rights, and may amount to a mere trespass. The transfer to the circuit judges of the commissioners' previous jurisdiction over water controversies, it was held, did not do away with their equity jurisdiction in such cases; they now hear and determine water controversies relating to property within their circuits under the statutory procedure, and still have general equity powers which they exercise when the parties are without remedy at the common law, whether the case relates to property within their circuits or not. It was further stated (at p. 118) that:

> * * * when the legal right is reasonably clear and there is no uncertainty of the principles of law involved, its establishment at law is not required but equity will ascertain the existence of the right as well as protect it. This is especially true of illegal diversion of water and illegal interference with water rights.[56]

These jurisdictional principles were reaffirmed in a case[57] in which a suit was instituted "in the circuit court of the first judicial circuit, Territory of Hawaii, at chambers, in equity"—sitting on the Island of Oahu—to enjoin the maintenance of a dam and the diversion of water from a stream on the Island of Kauai, which lies in the fifth judicial circuit. It was held, on demurrer, to be well settled that courts of equity had not been deprived, by the legislative grants of power to commissioners of water rights, of jurisdiction to restrain the illegal diversion of water; that in proper cases courts of equity have jurisdiction of controversies concerning water rights even where the lands and waters are situated in another circuit, so that the judge of the first circuit, sitting as a court of equity, has jurisdiction to enjoin the illegal diversion of water in a case in which the land involved is situated in the fifth circuit; but that when the same judge of the first circuit

[55] *McBryde Sugar Co.* v. *Koloa Sugar Co.*, 19 Haw. 106, 116-119 (1908).

[56] This statement was approved in *McBryde Sugar Co.* v. *Andrade*, 22 Haw. 578, 580 (1915). In this case there was no substantial dispute as to the right of plaintiff to an easement across defendant's land for the conveyance of water; while defendant's patent did not except the previous grant to plaintiff, the prior grant had been duly recorded and the defendant took title subject to that grant. There had been no abandonment of the easement by plaintiff. Equity therefore had jurisdiction to protect the legal right of plaintiff in property by injunction, the right of plaintiff being clear and the court being of the opinion, on the evidence, that there was no substantial dispute as to it, even though the right had not been established at law.

[57] *Territory of Hawaii* v. *Gay*, 32 Haw. 404, 410-414, 418 (1932).

sits as a commissioner of water rights, his jurisdiction is limited to cases in which the land is situated within his circuit. This particular case, it was held, was a proper case for equity. However, the action of the circuit judge in declining to take jurisdiction and his order dismissing the bill were sustained, on the ground indicated by the judge that it would be inequitable and oppressive to maintain jurisdiction in the first circuit—all the lands being on Kauai and being numerous, and witnesses probably numerous, so that serious expense would be entailed by a trial in Honolulu[58]—but the court stated that the decree "should expressly declare that the dismissal is without prejudice to the right of the petitioners to institute proceedings in another circuit."

A number of other suits in equity that have involved controversies over water rights have been appealed to the supreme court.[59]

Character of Decrees in Water Controversies

The early controversies related to the essentially small uses of water required for domestic purposes and for the irrigation of taro patches. With the decline in the demand for taro and the growth of the rice industry, which for a time was important, the right to use water for rice irrigation began to appear in water controversies. Still later, with the development of the sugar industry on a commercial scale, controversies arose over water that had been claimed and actually used in former times under ancient taro rights and later devoted to the irrigation of sugar cane in place of taro; and as the sugar industry grew and the requirements for water for cane increased, the controversies extended to rights to use water on a much larger scale than had been encompassed by the early native uses. The ancient principles governing the right to use water were retained, and remain even now the basis of the system of water rights in the Islands; but necessarily the application of the fundamental principles to controversies of ever-widening scope required reinterpretations and enlargements appropriate to the expanding agricultural economy. The aggregate of proven uses of water extant at the time of the land reform, even if all such uses were converted from taro to sugar irrigation, would have been adequate for only a very small fraction of the present acreage in cane irrigated from surface streams. More water than that covered by ancient appurtenant rights was required; hence there came to be developed principles relating to the use of "surplus" waters—meaning the quantity flowing in a stream in excess of that required to satisfy the ancient appurtenant and prescriptive rights attaching to the waters of that stream. (See p. 69 and following.) These "surplus" waters are of great importance in the present irrigation economy of the Territory.

[58] Citing *Hee Fat* v. *Chang Chip*, 25 Haw. 623 (1920), a case involving the dissolution of a copartnership, in which the same jurisdictional question concerning the same circuits arose, and in which the exercise of discretion on the part of the circuit judge of the first circuit in refusing jurisdiction because of the same circumstances was upheld.

[59] *See Yick Wai Co.* v. *Ah Soong*, 13 Haw. 378 (1901); *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 14 Haw. 50 (1902), 15 Haw. 675 (1904), 16 Haw. 113 (1904); *Lum Ah Lee* v. *Ah Soong*, 16 Haw. 163 (1904); *Tsunoda* v. *Young Sun Kow*, 23 Haw. 660 (1917); *Territory of Hawaii* v. *Gay*, 31 Haw. 376 (1930). *Peck* v. *Bailey*, 8 Haw. 658 (1867), was decided by a single justice and was not appealed. Uses of water were involved in: *Chulan & Co.* v. *Princeville Plantation Co.*, 5 Haw. 84 (1884); *Lopez* v. *Acheu*, 5 Haw. 607 (1886); *Ung Wo Sang Co.* v. *Alo*, 7 Haw. 288 (1888), 7 Haw. 306 (1888), *Un Wo Sang Co.* v. *Alo*, 7 Haw. 661 (1889), 7 Haw. 673 (1889), 7 Haw. 739 (1889); *Cha Fook* v. *Lau Piu*, 10 Haw. 308 (1896); *Wailuku Sugar Co.* v. *Hawaiian Commercial & Sugar Co.*, 13 Haw. 668 (1901); *Oahu Railway & Land Co.* v. *Armstrong*, 18 Haw. 258 (1907), 18 Haw. 429 (1907), 18 Haw. 507 (1907). Controversy over a right of way, involving equity jurisdiction similar to that in water cases: *Ideta* v. *Kuba*, 22 Haw. 28 (1914).

The principles that now govern the character and exercise of water rights in Hawaii have been formulated by the supreme court in decisions on appeal in these numerous controversies. The larger number of such cases went up on appeal from decisions of commissioners of water rights, and a smaller but nevertheless considerable number from decisions of the circuit courts at law and in equity. The supreme court decisions have affirmed some lower decisions and decrees and have reversed others, and in still other cases have affirmed in part and reversed in part. In certain instances they have directed that the decrees be modified to contain certain specific things; in other instances they have simply announced principles and then directed that decrees be issued in accordance therewith. The judgments and decrees referred to in the following pages are those that were issued pursuant to decisions of the supreme court on appeal.

Determination of Rights of Parties

The settlement of a controversy between claimants to the right of use of water necessarily involves the ascertainment of the rights of the parties and specific findings as to such rights. Based upon the findings, the commissioner is required by the statute to give such decision as may "appear to be in conformity with vested rights and shall be just and equitable between the parties."[60] The commissioners cannot create new privileges, nor apportion and distribute water arbitrarily without reference to its title.[61]

Orders Effectuating Settlement of Controversies

The statute provides that the decision of the commissioner on a water right shall state the proportion of time for use, and any other things necessary to the right; and that it may also regulate the methods by which water may be obtained, and by which its supply may be controlled.[62] The original act gave the commissioners authority to punish for contempt; later amendments added the power to enforce judgment, and to enforce the specific performance of judgment. Under the present act the circuit judges, sitting as commissioners of water rights, have the same authority in respect to their special jurisdiction as they have at chambers.[63]

The authority of the commissioners to enforce judgments, before the statute was amended to include the authority to enforce the specific performance of judgments, was construed by the supreme court as giving the commissioners authority to make such orders as might be legitimate and necessary to the actual enforcement of their judgments.[64] Counsel had claimed that the jurisdiction of the commissioners was limited to declaring the respective rights of the parties and the manner of their exercise, and that when the rights had been settled, equity must be resorted to in order to protect the enjoyment of the right or to redress infringements upon it. The court concluded that the legislature had not intended to compel parties

[60] Rev. Laws Haw. 1945, sec. 10221. The decision, however, must not be contrary to well-settled principles of law: *Achi* v. *Poni*, 5 Haw. 176, 178 (1884), a controversy over a right of way. Section 10221 states that the decision "shall state expressly the findings of fact on the evidence."

[61] *Davis* v. *Afong*, 5 Haw. 216, 218 (1884).

[62] Rev. Laws Haw. 1945, sec. 10221.

[63] Rev. Laws Haw. 1945, sec. 10224.

[64] *Davis* v. *Afong*, 5 Haw. 216, 218 (1884).

to establish their rights in one forum and to resort to another forum in which to have such rights enforced or protected; that the very object of this special proceeding was to create a forum for the complete adjudication of such matters, subject to appeal. The commissioners, therefore, might order the removal of obstructions or forbid their erection, in order to restore matters to the condition they were in when the acts that were the subject and cause of the controversy were done.

The decision, however, must be responsive to the prayer. Where a complaint alleged plaintiff's title to water by prescription, its diversion by defendant, and asked for an injunction to prevent its further diversion, and did not pray that the rights of both parties be settled and apportioned, it was not competent for the commissioner to award one-half of the water in controversy to petitioner.[65] The issue was whether plaintiff had acquired an exclusive right to the water by prescription; the injunction should either have been granted or refused on the findings as to whether the plaintiff's title had been established or not.

Same: Apportionment of Water

Determination of the right to use water includes a determination of the actual extent of the right, where such ascertainment is possible. In one of the early appeals, in which ancient rights were involved, the supreme court stated that to announce that certain lands are entitled to the water they have enjoyed by ancient custom, and not to say what proportion of the general water supply this may be, is simply to enunciate a principle of law without rendering a decision.[66] In such a controversy a quantitative determination of those rights should be made, which it was stated, may be defined and measured either by time of use or in any other way which seems just to the commissioners, according to the rights of the respective parties. It was after the rendering of this decision that the statute was amended to require the commissioners to state the proportion of time for use and other matters affecting the exercise of the right.

The supreme court stated in 1917[67] that when the evidence furnishes a reasonably definite basis for determining the quantity or the proportion of flow of water to which certain land is entitled, either by time or quantity, it is proper to make a definite adjudication in that respect; but that where the extent of an existing right is not known to the holder and cannot be ascertained, a new use of the water, if beneficial, "ought not to be restrained upon merely conjectural grounds." The authority of the court is limited to "ascertaining, determining, defining and enforcing proven rights." Injunction, in other words, will not issue in a case in which injury is not proved. But, while the court held that neither the commissioner nor the supreme court was required to base a finding as to quantity of water on mere conjecture, a decree was authorized declaring the petitioner entitled to the surplus normal flow (after the satisfaction of certain other rights) for irrigation purposes "to the extent of the quantity to which the lands owned by him were entitled for such purposes by custom at the time the lands first passed into private ownership, whatever that quantity was." (See discussion of evidence as to quantities of water, pp. 53-54, above.)

[65] *Kohala Sugar Co.* v. *Wight*, 11 Haw. 644, 645 (1899).
[66] *Loo Chit Sam* v. *Wong Kim*, 5 Haw. 130, 132-133 (1884).
[67] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 69 (1917).

Where the distribution of water in early times was made by time only—that is, rotation of the entire stream among various users, according to a definite schedule, which seems to have been the practice in a number of localities—and it was not shown that the parties obtained their water rights in proportion to the extent of their lands, it was held in an early case that the commissioners had no authority to change that system to a new system of apportionment by extent of land; for to change the system by which water was originally distributed would be to change the water rights themselves.[68] Awards by time, or rotation, based upon ancient custom, have been made in various cases.[69] In *Liliuokalani* v. *Pang Sam, supra,* it was admitted that a rotation system had been in effect; but the action of the commissioners in awarding water to a 25-acre tract of kalo land for only 2 hours each day was modified, the court stating that in view of the physical conditions this run of water was manifestly insufficient. In *Lonoaea* v. *Wailuku Sugar Co.*[70] it was held that the owners of a sugar plantation had acquired a prescriptive right to use certain water by day, the natives taking it for kalo culture at night; and the court felt that this conclusion worked no injustice on the kalo growers, for a continuous flow day and night in all the main and lateral auwais (ditches) would be wasteful and exceedingly injurious, inasmuch as neither kalo nor cane required continuous irrigation, and cane would be injured by it. Furthermore, transmission losses in long ditches would be heavy.

Other ancient methods of apportionment have likewise been preserved by decree, notably the general method of irrigating kalo by continuous flow, where the patches had been constructed in successive terraces from each of which, after the patch was filled, the water overflowed to the next lower patch.[71] Ancient conditions at diversion structures have also been ordered preserved, or at least not altered to the injury of holders of other rights.[72]

[68] *Wilfong* v. *Bailey,* 3 Haw. 479, 480 (1873).

[69] *Liliuokalani* v. *Pang Sam,* 5 Haw. 13 (1883); *Maikai* v. *A. Hastings & Co.,* 5 Haw. 133 (1884); *Davis* v. *Afong,* 5 Haw. 216 (1884); *Kaanaana* v. *Richardson,* 5 Haw. 235 (1884); *Mele* v. *Ahuna (Nakeu* v. *Ahuna),* 6 Haw. 346, 347 (1882); *Horner* v. *Kumuliilii,* 10 Haw. 174 (1895). See also *Kahookiekie* v. *Keanini,* 8 Haw. 310, 311 (1891), a controversy in which the validity of the custom was not questioned; and *See Yick Wai Co.* v. *Ah Soong,* 13 Haw. 378, 380 (1901), an equity case in which the existence of such a right was conceded. In *Kaleiopu* v. *Booth,* 10 Haw. 453 (1896), the commissioner had found that plaintiff's land was entitled in part to water from a stream and awarded her all the water in a ditch for 2 hours each day; but the supreme court remanded the case for further evidence and decision, for there was no evidence on which to base a finding as to the amount of water plaintiff was entitled to, and no clear preponderance of evidence either way as to whether plaintiff was entitled to any water at all.

[70] 9 Haw. 651, 662-664 (1895). The rights determined in this commissioner case were subsequently involved in a suit in equity which came before the supreme court three times: *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 14 Haw. 50 (1902), 15 Haw. 675 (1904), 16 Haw. 113 (1904).

[71] *Wailuku Sugar Co.* v. *Hale,* 11 Haw. 475, 476 (1898). In *Ing Choi* v. *Ung Sing & Co.,* 8 Haw. 498 (1892), the court stated that this position of the premises, where they must naturally receive the waste water from adjoining wet lands above, "is often sufficient to account for the growth of a water right under the ancient Hawaiian system of irrigation." See also *Palolo Land & Improvement Co.* v. *Wong Quai,* 15 Haw. 554, 563 (1904).

[72] In *Chun Lai* v. *Mang Young,* 10 Haw. 133, 134-135 (1895), it was held that an auwai was entitled to the amount of water that had usually been turned into it by means of a dam of loose stones built entirely across the stream, the next lower auwai being entitled to only the overflow and seepage, and the commissioner's finding that one party was entitled to one-third of the stream and another to two-thirds was not supported by the evidence. In *See Yick Wai Co.* v. *Ah Soong,* 13 Haw. 378, 382-383 (1901), a suit in equity, it was held that where, from time immemorial, an opening had existed in a dam through which part of the water flowed downstream to other lands, part being diverted into a ditch, this condition must be maintained in times of drought as well as in times of plenty. It was urged that enforcement of a decree to that effect would not be practicable, no accurate measurements of flow ever having been made; but the court saw "no inherent impossibility in continuing to do that which for a great many years the native Hawaiians have done, to wit, maintain the dam and the ditch in substantially the same condition as they were in January last and in the time prior thereto. It is better to maintain existing rights as far as possible and substantially than to knowingly alter them materially or to destroy some of them entirely."

Where the use of water was transferred from one crop to another—such as kalo to rice—the measure of use of water from ancient times having been the quantity required for kalo culture, that measure has been preserved for the new use.[73] As shown below, in discussing the transfer of place of use and character of use of water (see p. 136 and following), the ancient measure of quantity has followed the transfer to the new place or the new kind of use of the water.

It has been held that where ditches are entitled by ancient usage to take a definite proportion of the normal flow of a stream, the same division is to be maintained in times of diminished flow;[74] and that the rule is the same where the division is by time instead of proportion of the water.[75]

The court stated in the *Carter* case that the general principle of proportional diminution in time of shortage applies as well to different lands along one ditch, as between different ditches from the same stream, as Hawaiian custom seems to have recognized this.[76] But it was further observed that this rule of apportionment on a single ditch must be taken with some qualification, for it cannot always be applied with full force as between the several owners along the line of a long ditch; that it would be absurd to hold that a supply of water must be sent down to distant lands, when the entire flow would be consumed by seepage and evaporation, simply because such lands were irrigated thus when there was an abundance of water, but no persons having lived on such lands for many years and no water used for irrigation thereon during that time, and thus deprive another claimant of the available water for irrigation.

It was stated in one of the early decisions in equity that if the parties are unable to agree upon a suitable method for regulating and adjusting the division of water in which they have several interests, an admeasurement may be made by order of court.[77]

Same: Protection of Water Right against Infringement

The decrees rendered in the settlement of water controversies, in addition to declaring the rights of the parties, have contained corrective orders where necessary to rectify situations the continuance of which was found to be causing injury to holders of water rights. Such an order appears to have been accorded the force of an injunction, even in the early cases; but whatever question there may have been originally as to this was settled by the decision in *Davis* v. *Afong*,[78] referred to above (see p. 59), and by the amendments conferring upon the commissioners the authority to enforce specific performance of judgments.

Several cases that reached the supreme court involved the obstruction of the flow of water from upper kuleanas to lower kuleanas under the ancient system of irrigating kalo patches in successive terraces, where the

[73] *Davis* v. *Afong*, 5 Haw. 216, 224 (1884). Similarly, in *Wong Leong* v. *Irwin*, 10 Haw. 265, 267, 269 (1896), where a change from taro (kalo) to cane was concerned, and the new use was made on new lands, the quantity which the party was entitled to divert for use on the uncultivated taro lands was held to be the measure of the new use on cane lands.

[74] *Peck* v. *Bailey*, 8 Haw. 658, 672 (1867); *See Yick Wai Co.* v. *Ah Soong*, 13 Haw. 378, 382-383 (1901); both being proceedings in equity.

[75] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 61-62 (1917).

[76] Citing *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 660 (1895), and *Horner* v. *Kumuliilii*, 10 Haw. 174, 178 (1895).

[77] *Peck* v. *Bailey*, 8 Haw. 658, 666 (1867).

[78] 5 Haw. 216, 218 (1884).

upper owner was attempting to divert the water elsewhere for his own use. Where this method of irrigation was shown to have been an ancient custom, the upper owner was ordered to cease the unlawful interference;[79] and in a proceeding brought for the settlement of water rights of all irrigated lands in Palolo Valley, Oahu, where it was found that the seepage and overflow from irrigated lands to adjoining lands and thence to streams from which lower rights were supplied, constituted a real and important part of the water supply of the adjoining and lower lands, it was ordered that throughout the valley all seepage and overflow needed for irrigated lands below be permitted to flow on the adjoining wet lands or directly or indirectly into the streams.[80] Where necessary, a flume has been ordered removed, where used to divert to one's own purposes surplus water that should have been allowed to percolate to lower lands, and the raising to excessive height of dams around kalo patches for the same purpose ordered stopped;[81] and a ditch used for such purposes has been ordered filled within a specified time, with an order to refrain from further interference with the natural flow to lower adjoining lands.[82]

In a controversy over the location of points of diversion of two auwais which took water from opposite sides of a stream, it appeared that the heading of one auwai had formerly been downstream from the dam of the upper auwai but had been moved upstream by the owner in order to take water out at the upper dam; whereupon the owners of the upper auwai promptly filled up the extension, and the other party to the controversy brought suit before the commissioner. As the evidence showed that the lower auwai had been entitled to only the seepage and overflow from the upper dam, the complaint was ordered dismissed.[83] It was held in an action for assault and battery that one may remove so much of a dam as interferes with his right of water in a stream; but that how far he may go after resistance, depends upon the circumstances.[84]

Same: Injunction Denied where Injury Not Clearly Established

Petitions for orders requiring the removal of structures or the cessation of practices have been denied in cases in which the complaining party was unable to prove injury to his water right. As stated in the equity case of *Peck* v. *Bailey*,[85] the earliest reported decision involving water rights:

> Injunctions are not awarded by Courts of Equity, for the infringement of even doubtful rights, until they have been established at law, and therefore I cannot certainly in this case issue an injunction as prayed for. * * *

For example, one who was entitled to only the water that escaped through or under a dam of loose stones, which had been rebuilt durably with cement and stones, was held not entitled to have the dam removed where the evidance showed that about as much water escaped as formerly and that consequently the rights of the complainant were not being impaired or

[79] *Ing Choi* v. *Ung Sing & Co.*, 8 Haw. 498, 499 (1892); *Wailuku Sugar Co.* v. *Hale*, 11 Haw. 475, 476 (1898).

[80] *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 563, 569 (1904); rehearing denied, 16 Haw. 52 (1904).

[81] *Kahookiekie* v. *Keanini*, 8 Haw. 310, 312 (1891).

[82] *Ing Choi v. Ung Sing & Co.*, 8 Haw. 498, 499 (1892).

[83] *Chun Lai* v. *Mang Young*, 10 Haw. 133, 135 (1895).

[84] *Chee Kit* v. *Lee Lung*, 15 Haw. 69, 71 (1903).

[85] 8 Haw. 658, 674 (1867).

interfered with by the change.[86] The same principle was applied in a later case, in which no injury to respondent was shown from the maintenance of a new concrete dam in place of a former rubble dam of loose construction, and no injury to petitioner from the maintenance of respondent's diversion and distribution system, petitioner having been unable to prove the extent of his right.[87] It was held in another case that a dam not then being used for an illegal purpose would not be ordered removed, for it might be used for a legitimate purpose, and that there was no objection to the enlargement of an auwai so long as no more water was taken into it than the auwai was entitled to divert.[88]

Injunctions have likewise been denied in other comparable situations; for example, where a party was diverting to new lands, for the irrigation of sugar cane, no more water than he was entitled to use on his uncultivated taro lands and the complaining party's claim to the seepage was not established;[89] where the right of the petitioner was not clearly proved;[90] and, in a case in equity, where the injury to the owner of a ditch, resulting from the placing of an obstruction in the bed of the stream from which the ditch diverted, by the owner of the stream bed, was not clearly established.[91]

Same: Damages in Actions at Law and in Equity

The statute does not authorize the commissioner to award damages for the wrongful diversion of water; and the supreme court stated in a fairly early case:[92]

> The Commissioners, it is conceded, are not authorized to award damages for wrongful diversion of water. Such a matter should be the subject of a civil action in the proper Court.

It was similarly stated, several years later, in a case that involved a claim for damages for obstruction of a right of way, that the board of commissioners was not a tribunal for the recovery of damages and could not assess damages.[93]

Damages for violation of commissioner decrees, however, have been awarded by the courts in actions at law.[94] In this last-cited case the injury consisted of the diversion to their own uses, by the owners of lands on which springs arose, of water which should have been allowed to flow down to lower premises; but the damages were reduced because of the failure of the plaintiffs to share the labor of cleaning out the springs and pond, as they had been ordered to do in the decree of the commissioners, and because of their failure to assert their rights to water on specific days. The supreme court held, in one case,[95] that the damages awarded were excessive and unsupported by the evidence most favorable to the plaintiff; and held in

[86] *Wong Kim* v. *Kioula,* 4 Haw. 504, 505-506 (1882).

[87] *Carter* v. *Territory of Hawaii,* 24 Haw. 47, 68 (1917).

[88] *Lonoaea* v. *Wailuku Sugar Co.,* 9 Haw. 651, 657, 665 (1895); see *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 14 Haw. 50, 67 (1902).

[89] *Wong Leong* v. *Irwin,* 10 Haw. 265, 267-269 (1896).

[90] *Kohala Sugar Co.* v. *Wight,* 11 Haw. 644, 654 (1899).

[91] *Wailuku Sugar Co.* v. *Hawaiian Commercial & Sugar Co.,* 13 Haw. 668, 669-671 (1901). See also the equity decision in *Cha Fook* v. *Lau Piu,* 10 Haw. 308 (1896).

[92] *Davis* v. *Afong,* 5 Haw. 216, 217 (1884).

[93] *Kahai* v. *Rose,* 7 Haw. 270, 272 (1888).

[94] *Mele* v. *Ahuna (Nakeu* v. *Ahuna),* 6 Haw. 346, 347-349 (1882).

[95] *Scharsch* v. *Kilauea Sugar Co.,* 13 Haw. 232, 235 (1901).

another, an equity case,[96] that the award was based upon competent evidence and was not excessive.

Actions for trespass that involve or may involve title to real estate—including water rights—must be brought in the circuit court and not originally in the district court (see p. 49).

Surface-Water Supplies to Which Rights Attach

This classification relates to water supplies as they exist on the surface, unaffected by their *sources*. Thus springs originate from ground water, but they exist and are naturally available at the surface. Watercourses are fed by ground water, by diffused surface water, and by return water from irrigation; and artificial watercourses are supplied from springs and streams as well as other sources of supply. The source of a given water supply to which rights attach is an essential element in correlating rights to the use of interconnected water supplies, but does not enter into the classification adopted in this discussion.

Watercourses

The discussion in this chapter of rights to the use of surface waters is concerned primarily with surface watercourses. However, while most of the surface water that is used is diverted directly from natural watercourses, questions have arisen, for example, with respect to springs that have been treated for practical purposes as distinct sources of supply, and in connection with water that, after having been diverted from natural streams, is flowing in artificial watercourses or is overflowing from the first place of use. These and other related questions are important in Hawaiian water law and in the system of irrigation that has prevailed in the Islands from time immemorial. Hence in the following pages these sources of immediate surface supply other than watercourses are listed and the applicable principles stated.

Artificial Watercourses

Many of the ancient auwais of Hawaii long antedated, not only the period of land reform, but even the coming of the white man; and the regulation of uses of water from the auwais by custom was likewise of ancient origin. When provision was made for the settlement of water controversies by the commissioners of private ways and water privileges, controversies between claimants under the same auwai, as well as between owners of different auwais, came before the commissioners for settlement. Established custom being thus the controlling principle in the determination of established rights, there was no need for differentiating ancient artificial watercourses from natural watercourses; and controversies over ancient appurtenant rights appear to have been settled without developing different principles for artificial watercourses from those applying to natural watercourses.

In one of the earliest appeals to the supreme court, the introductory paragraph of the decision states that the parties had applied for a decision of their rights "in a certain artificial water-course called the Kamaauwai,"

[96] *Lum Ah Lee* v. *Ah Soong*, 16 Haw. 163, 169-170 (1904).

and the decision of the court adjudicated the rights without stressing the fact that the watercourse was an artificial one.[97] Some years later, in a case that involved water flowing from springs into an auwai in known and definite channels, the court stated certain principles as referring to natural streams, but held that "they apply equally to artificial water courses as this auwai is. Such has uniformly been the decision of this Court."[98]

The question as to whether irrigation is a natural want as distinguished from an artificial want, and the relation of that question to riparian rights in artificial watercourses, were discussed in two of the early cases. Chief Justice Allen stated, in *Peck* v. *Bailey*,[99] that the principle that the right of irrigation is a natural right, incident to a riparian estate, did not apply to an artificial watercourse that had been included in a grant as an appurtenance; further:

> While the King owned this Ahupuaa, he had a right to apply the water to what land he pleased, but after the water courses were made, more especially after being in use from time immemorial, his conveyance of the land would include them, the same as his conveyance of land bordering on the Wailuku river will include the rights of water in said river, which had not been before granted. * * *

In a subsequent case Justice Judd remarked that whether the use of water for irrigation in an arid climate is a natural want, would depend considerably upon whether the claimant is a riparian proprietor; and that whether lands upon an ancient but artificial watercourse would have the incidents of riparian proprietorship, would depend largely upon whether such watercourse is accustomed to flow uninterruptedly and with the regularity of the natural stream itself.[1] Of this, however, there was no evidence in the case, so the statement was dictum. In view of the later decisions that appear to limit riparian rights to the surplus freshet or storm waters of a stream to which two or more ahupuaas are physically riparian (see p. 86), the question of riparian rights in artificial watercourses, particularly irrigation ditches, is probably not of great practical importance.

The character of rights that attach to artificial watercourses was expounded more fully in *Carter* v. *Territory of Hawaii*,[2] to the effect that where ancient ditches, prior to the acquisition of private titles to the lands, had become incorporated into the permanent topography of the country so as to become virtually natural watercourses, the right to water in accordance with ancient custom passed with the conveyance of the land as an incident. It was stated (at pp. 57-58):

> The diversion of water from natural streams by means of artificial ditches for domestic and agricultural use was practiced by the Hawaiians before the advent to these islands of the white man. The ancient ditch systems connected with running streams became a permanent feature of the topography of the localities where they were constructed. And upon the acquisition of legal titles to lands to which such ditches were tributary the right to water therefrom passed as an appurtenance or incident without express mention. * * *

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[97] *Wilfong* v. *Bailey*, 3 Haw. 479 (1873).
[98] *Davis* v. *Afong*, 5 Haw. 216, 223-224 (1884).
[99] 8 Haw. 658, 671 (1867).
[1] *Wailuku Sugar Co.* v. *Widemann*, 6 Haw. 185, 187 (1876).
[2] 24 Haw. 47, 64 (1917).

And again (at p. 61):

> Large ditches which were constructed and have been used for the purpose of diverting a constant flow of water from a stream and distributing it among several parcels of land are to be regarded virtually as natural water-courses. * * *

Carrying the principle a step farther, it was held (at pp. 60-62) that with certain qualifications, the general principle of proportional diminution in time of water shortage applies to different lands along one ditch, as well as to different ditches diverting from the same stream (see p. 127, below).

Tributaries

A few cases have involved the rights of lands lying below the junctions of streams, with respect to the tributary sources of supply. No general rule appears to have been stated, but in the decisions the tributary sources have been treated as a part of one common source of water supply.

The holders of rights on the lower portion of a stream contended in one case that an upstream owner had no right to divert, from five streams on three lands, the quantity of water to which he was entitled from a larger number of streams on a larger number of lands, taking the water thence across a divide to another ahupuaa.[3] It was held that inasmuch as all the streams in question united before leaving the defendant upper owner's lands, and as all the plaintiffs' lands were situated below the defendant's lands, it was immaterial to the plaintiffs from what stream or streams the defendant's water was diverted.

In a proceeding brought for a settlement of water rights in Palolo Valley, Oahu, it was shown that the water came from two streams which united in the cultivated portion of the valley.[4] The flow of the two tributary streams was about equal in rainy seasons, but at other times the flow of one of them was much greater and more constant than that of the other. The court was satisfied upon the evidence that each of the dams below the junction was entitled to water from both streams. Further:

> This ancient rule is a just one, for thus the lands on each side of the stream below the junction receive a portion of the lesser and more variable flow from the Waiomao and a portion of the greater and more constant flow from the Pukele.

In other words, the decision on this point apparently was based upon evidence as to the ancient custom, rather than upon a general principle of law, although the court felt that the custom was equitable.

Water Originating on One's Land

From the rules of ancient Hawaiian agriculture has come the general principle that a landowner is entitled to the use of the water that originates on his land, subject only to the rights that others may have acquired, such as by ancient usage or by prescription.[5] This point has been decided in several cases relating to spring waters, rights to the use of which are discussed under "Springs," below.

[3] *Wong Leong* v. *Irwin*, 10 Haw. 265, 269-270 (1896).

[4] *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 559, 568 (1904); rehearing denied, 16 Haw. 52 (1904).

[5] *Davis* v. *Afong*, 5 Haw. 216, 221 (1884).

The general principle has also been extended to the use of the water of watercourses by the owners of ahupuaas and ilis in which the streams occur, based upon historical relationships rather than upon the authority of *Davis* v. *Afong,* but with a modification that has come about through a division of stream flow into "ordinary or normal flow" and "flood and freshet waters" if the stream crosses two or more ahupuaas and in such case an engrafting of the common-law riparian doctrine upon the rights to flood and freshet waters. This is discussed more fully elsewhere in connection with surplus waters of streams (see p. 74) and the riparian doctrine (see p. 89). At this point it will be sufficient to note that so far as the normal flow is concerned, the surplus above established rights belongs to the konohiki of the ili or ahupuaa on which the waters originate, even though if not diverted such waters would flow through a lower ahupuaa,[6] and that as to the flood and freshet flow, two or more such land units riparian to the stream are limited to reasonable use under the common-law riparian doctrine.[7]

Springs

Controversies that have reached the supreme court over rights to the use of the water of springs have arisen, in the usual case, between the owner of the land on which the spring originated, and claimants to the use of that portion of the spring water, in excess of the quantity consumed in crop production on the land of origin, that flowed away to other land. It appears to be settled that the owner of land on which a spring is located has the "ownership" or at least the right to the use of such spring, qualified to the extent of specific easements that may have been acquired by others.[8]

In a case in which water originating in springs was divided into two streams, from one of which (Kaluaolohe) a canal had been taken to irrigate land of the owner of the springs, but which land was subsequently irrigated from a dam placed on the other (Kamoiliili) stream, the court held that it was error for the commissioners to hold that the later dam on the Kamoiliili was not entitled to water from that stream.[9] It was stated that the change did not affect the rights of others, and that the latter were not concerned as to the stream from which the upper land received its water supply originating in these springs.

While the landowner is entitled to the use of water sufficient for his needs, from a spring that originates on his land, it is equally well settled that rights in the surplus over his needs may be acquired by others.[10] Such

[6] *Territory of Hawaii* v. *Gay,* 31 Haw. 376, 387-388 (1930). The opinion of Chief Justice Perry referred at length to the ruling in *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 15 Haw. 675, 680-681 (1904), to the effect that the surplus waters of an ahupuaa were the property of the konohiki and were not appurtenant to any particular portion of the ahupuaa, and concluded that such ruling was equally applicable to an ili kupono and to the surplus waters of an ahupuaa which if unrestrained would flow through a lower ahupuaa. "The 'general principle' declared in *Davis* v. *Afong,* 5 Haw. 216, 221, that 'a landowner is entitled to the use of the water originating upon his land, subject only to the rights which others may acquire by prescription,' if it is applicable to a flowing stream in an ahupuaa would lead to the same result. My conclusion, however, in the case at bar is based solely, as was the decision in *H. C. & S. Co.* v. *W. S. Co.,* 15 Haw. 675, upon the historical considerations there recited."

[7] *Carter* v. *Territory of Hawaii,* 24 Haw. 47, 70-71 (1917).

[8] *Davis* v. *Afong,* 5 Haw. 216, 221-222 (1884); *Kahookiekie* v. *Keanini,* 8 Haw. 310, 312 (1891); *Kohala Sugar Co.* v. *Wight,* 11 Haw. 644, 651 (1899).

[9] *Liliuokalani* v. *Pang Sam,* 5 Haw. 13 (1883).

[10] *Kahookiekie* v. *Keanini,* 8 Haw. 310, 312 (1891).

rights may have been acquired by prescription against the konohiki, on the part of the holders of kuleanas, through a sufficiently long and adverse open use of water that flowed from a pond supplied by a spring into an auwai constructed for the purpose of carrying the overflow away for irrigation.[11] Or such right may have been established from ancient usage and an award therefor by the commissioners.[12] Similarly, in a case in which the overflow from kalo patches, supplied by springs on the land of the owner, constituted part of the source of supply of a natural watercourse, a prescriptive right against the owner of the land on which the springs arose has been recognized in favor of a user of water from the watercourse; and to protect the right of this downstream user in the continuance of the overflow from the kalo patches, the owner of the latter was ordered to remove a flume by means of which he was diverting the overflow elsewhere.[13]

A case decided in 1899, in which the testimony was voluminous, involved a water head which appeared to be a hole in which water collected from a large area of swampy ground above it.[14] This the court stated was not strictly a "spring" in the sense that the water came perennially to the surface from invisible subterranean sources; but the court called it a spring. The question of source of supply of the spring was not in issue. The spring was located on land of the defendant, and the sole issue was whether plaintiff had acquired by prescription an exclusive right to the flow of water from the spring. On the facts, it was held that a prescriptive right had not been established. In discussing the ownership of the spring, and the fact that rights in the water had been acquired for individual ancient kalo patches, the court stated (at page 651):

> One thing we find to be proved—that the Kupunaokane water was situated in and appurtenant to the land of Halawa and popularly speaking "belonged" to its owners, and to the holders of the kalo patches within its boundaries, for it is conceded that ancient kalo patches have acquired easements in the water for their sustenance.

Surplus Waters of Streams

By the "surplus waters" of a stream, as used in the judicial nomenclature of Hawaii, is meant those waters to the use of which ancient appurtenant rights or prescriptive rights have not attached.[15] (The earlier use of

[11] *Davis* v. *Afong,* 5 Haw. 216, 221, 224 (1884).

[12] *Mele* v. *Ahuna (Nakeu* v. *Ahuna),* 6 Haw. 346, 349 (1882).

[13] *Kahookiekie* v. *Keanini,* 8 Haw. 310, 311-312 (1891).

[14] *Kohala Sugar Co.* v. *Wight,* 11 Haw. 644 (1899).

[15] See *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 14 Haw. 50, 61 (1902), 15 Haw. 675, 680 (1904), 16 Haw. 113, 115 (1904); *Palolo Land & Improvement Co.* v. *Wong Quai,* 15 Haw. 554, 562 (1904); *Carter* v. *Territory of Hawaii,* 24 Haw. 47, 70-71 (1917); *Foster* v. *Waiahole Water Co.,* 25 Haw. 726, 734 (1921); *Territory of Hawaii* v. *Gay,* 31 Haw. 376, 382, 384 (1930).

Section 221 of the Hawaiian Homes Commission Act, 1920, 42 Stat. L. 108, ch. 42 (Rev. Laws Haw. 1945, p. 70), provides for the use in connection with Hawaiian home lands, under certain circumstances, of government-owned water covered by water licenses and not so covered, and for the acquisition and condemnation of privately-owned surplus water and of government-owned surplus water covered by earlier licenses; and in such connection provides that " 'water license' means any license issued by the commissioner of public lands granting to any person the right to the use of government-owned water" and that " 'surplus water' means so much of any government-owned water covered by a water license or so much of any privately owned water as is in excess of the quantity required for the use of the licensee or owner, respectively."

the term "prescriptive" as including ancient rights is discussed elsewhere herein, p. 108.) The large measure of control by the konohiki over waters within an ahupuaa was recognized in the early cases, but the principles governing rights to the use of surplus waters generally do not appear to have been definitely established prior to the series of decisions rendered by the supreme court at the turn of the century with respect to the Wailuku (now called Iao) Stream on the Island of Maui. (See footnote 22.)

Early Cases

The leading decision in *Peck* v. *Bailey*[16] stated that while the king owned an ahupuaa he had a right to apply the water of the stream running through it to what land he pleased, but that his conveyance of portions of the land would include the auwais upon them and rights in the stream upon which the lands bordered. The grantor was the descendant of the konohiki and had the same rights as his ancestor; and where the grantor had conveyed portions of the ahupuaa to several persons, each took the watercourses on his lands and all the water that the lands had enjoyed from time immemorial, but no one of them could be lord paramount over the river. (While the area of these lands in relation to the total area of the ahupuaa was not stated, the several interests of these parties were later held by one of the litigants in a subsequent case, in which it appeared that the combined area then was only 11 percent of the area of the ahupuaa.[17]) The supreme court stated, subsequently, that by the rules of ancient Hawaiian agriculture, the konohiki was entitled to the use of water on his land for the irrigation of crops, subject to rights acquired from him by others.[18]

The basis for according to the konohiki the right of use of surplus waters, as against grantees of portions of the ahupuaa not served by auwais, was thus laid, but the specific point was not decided until the Wailuku (Iao) controversy went to the supreme court on its merits. In the first appeal in this suit, on the pleadings, one of the most important questions was whether a former decision[19] had settled the question as to "so-called surplus water, that is, the water, whether storm water or not, that was not covered by prescriptive rights."[20] The court stated (at p. 63):

> It would indeed have been strange if the court had intended to adjudicate rights to so-called surplus water without more explicit language. Such rights are fast becoming of very great importance and their adjudication would involve questions of great difficulty. Moreover, the question of the right to such water has long been a mooted question suggested in numerous cases that have come before this court and always recognized as one of great difficulty, and the court has carefully avoided passing upon it until compelled to do so and has always regarded it as an unsettled question.

[16] 8 Haw. 658, 662-663, 671 (1867). This case likewise arose on the Wailuku (Iao) Stream, but was between parties whose several interests were held by one of the litigants in the above-mentioned series of cases at the time of that subsequent litigation. See *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 660 (1895).

[17] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 678, 681 (1904).

[18] *Davis* v. *Afong*, 5 Haw. 216, 221-222 (1884). See also *Maikai* v. *A. Hastings & Co.*, 5 Haw. 133, 134 (1884).

[19] *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651 (1895).

[20] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 14 Haw. 50, 61 (1902).

The same caution was observed in a subsequent decision,[21] which was rendered before the supreme court decision on the merits in the Wailuku (Iao) Stream controversy was handed down. The reference in point was to the taking, by a reservoir, of "surplus water, meaning thereby freshet water and water not needed by any of the wet lands elsewhere in the valley, to the extent to which it has been taken in the past in the existing ditches or as overflow from them," the other parties having stated in their brief that they made no objection to such taking. Although this proceeding was brought for the settlement of all water rights in the valley, the court stated:

> In the absence of a controversy and of a contest and argument, we do not care to express any opinion on the point. It is of some importance, as a precedent at least. The question of the taking of any portion of such surplus greater than that mentioned is, of course, not before us.

The Wailuku or Iao Stream Controversy

This controversy, to which several references have been made above, was a proceeding in equity between two sugar companies, which together owned nearly 99 percent of the Ahupuaa of Wailuku, on the Island of Maui. It came before the supreme court three times.[22] Several years earlier a controversy over the Wailuku (Iao) waters, in which one of these companies had been involved, had been decided on appeal from the decision of the commissioner;[23] and the first of the equity appeals arose on a plea in bar to the effect that several matters alleged in the equity bill had been adjudicated in the decision on appeal from the commissioner's decision. It was held that certain things were *res judicata,* but that the former decision was not a complete bar to the equity suit. The case subsequently went up on the merits, and the third decision was on a motion for rehearing.

The Ahupuaa of Wailuku contained approximately 28,000 acres, of which it was estimated that complainant owned nearly 88 percent, respondent 11 percent, and other parties the balance of more than 1 percent. Complainant's holdings included some 19,500 acres of land, largely arable, in the lower section of the ahupuaa beyond the sand hills east of the Wailuku (Iao) Stream. This stream drained a portion of the high mountain watershed on the west. (The area east of the sand hills presumably contributed little or nothing to its surface flow.) The cultivated lands of respondent and practically all the taro lands of Wailuku were in the central section of the ahupuaa, which included the stream bed and adjacent flat bottom lands extending from the gorge of the upper valley to the sea. The central section included also the easy slopes from the foot of the mountains to the sand hills and a considerable mountain portion lying outside of the upper valley. The respondent also held under deed from the king some 1375 acres of kula land within the ahupuaa but not contiguous to any stream nor having any springs.

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[21] *Palolo Land & Improvement Co.* v. *Wong Quai,* 15 Haw. 554, 562 (1904).

[22] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 14 Haw. 50 (1902), 15 Haw. 675 (1904), 16 Haw. 113 (1904). The stream in litigation is called "Wailuku River" or "Wailuku Stream" in the opinions in these cases, as well as in *Peck* v. *Bailey* and *Lonoaea* v. *Wailuku Sugar Co.*: but it is now known as "Iao Stream."

[23] *Lonoaea* v. *Wailuku Sugar Co.,* 9 Haw. 651 (1895).

The court, in the appeal on the merits, divided the waters in controversy into three physical classes: (1) those of the ordinary flow; (2) those of ordinary (small) freshets, coming about once in 10 days; and (3) storm waters (large freshets). Then a division of the sum total of these waters from a standpoint of water rights was thus made:[24]

> These again may be divided into two classes: (a) surplus water, meaning thereby, as defined in 14 Haw. 61, the water, whether storm water or not, that is not covered by prescriptive rights and excluding also riparian rights, if there are any, and (b) water which is covered by prescriptive rights.

Surplus water, it was held, was the property of the konohiki to do with as he pleased and was not appurtenant to any particular portion of the ahupuaa. No limitation in ancient times upon such right of use ever existed or was supposed to exist. This, in other words, was a statement of ancient Hawaiian custom which the court considered still applicable as a matter of right. Concerning the contention that surplus waters were appurtenant to a particular portion of the ahupuaa (for example, in this case, the central portion to the exclusion of the lower portion beyond the sand hills), it was further stated (at pp. 680-681):

> There is no reason for supposing that such water was regarded as appurtenant to one portion of the arable land of an ahupuaa and not to another portion or for supposing that it was appurtenant to the arable land and not to the remainder of the ahupuaa. During recent years konohikis have in many instances diverted from the ahupuaa the surplus water either wholly or in large part. An argument based upon public policy or upon the necessity or wisdom of encouraging the cultivation of the soil upon a scale unknown and impossible in ancient times, cannot be of assistance, for a determination that the surplus water belongs, in accordance with ancient Hawaiian custom, to the konohiki is not less in favor of an enlarged measure of cultivation than would be a determination that such water belongs to the present holder of a particular portion of the ahupuaa.

The extant rights of the respondent were defined (at pp. 698-699), being its prescriptive rights, and including in the term "prescriptive" the rights appurtenant to taro land as already adjudicated (at p. 683); and it was held that respondent had not acquired any title to surplus water by grant (at p. 689), and specifically that no part of the surplus water passed under the deed of 1375 acres of kula land (at p. 683). Thus the respondent's contention that none of the surplus water could be used by the konohiki (the complainant) on its 19,500 acres of land in the lower part of the ahupuaa, was disposed of. The respondent's established rights so defined attached to the water needed therefor, whether of the ordinary flow or the freshet flows. And (at p. 690):

> More than this the respondent is not entitled to. The remainder, subject to other prescriptive rights, belongs to the konohiki, the complainant.

In the opinion on motion for rehearing,[25] which motion was denied, nothing that was said in the previous decision was changed. On the contrary, the view that the earlier decisions included ancient appurtenant rights in the term "prescriptive," was emphatically reiterated (see p. 110 below).

[24] 15 Haw. 675, 680.

[25] 16 Haw. 113.

Classification of Stream Water Flowing Entirely within an Ahupuaa

The foregoing cases dealt with a stream system that was confined within a single ahupuaa; the lands for which rights in the stream flow were adjudicated lay entirely within that ahupuaa. The principles that were established were (1) that prescriptive and appurtenant rights attached to the flood flows as well as the normal flow, to the extent to which the water was needed for the satisfaction of such rights, (2) that the entire surplus of the stream above the quantities needed for such established rights was the property of the konohiki to do with as he pleased, and (3), as a necessary corollary, that the surplus was not appurtenant to any particular portion of the ahupuaa. The surplus waters under such circumstances were those of the entire stream flow, without regard to any physical subdivision into normal flow and flood or freshet flow.

No departure from this principle has been made in subsequent cases in which independent ilis were not involved. An ili kupono is not a part of the ahupuaa within which it is geographically situated and is considered of equal degree and dignity, as noted below. Otherwise the principle has not been modified.

The petition in a later controversy concerning water rights alleged ownership of an ahupuaa in fee simple in the petitioner's lessor, ownership in the lessor thereby of the konohiki rights and of all the water of the ahupuaa not appurtenant to kuleanas within its limits, and that under certain leases of the ahupuaa and other lands within it, the petitioner as lessee was the owner of all the waters in the stream except a definite quantity appurtenant to a definite area of land.[26] The supreme court held, on demurrer, that the petition stated a cause of action, notwithstanding contentions (1) that the leases did not pass title to the surplus water, on the theory that the latter was not appurtenant to the ahupuaa; (2) that in any event it belonged, as the attorney general claimed, to the Territory, not having been conveyed by the patent as an appurtenance; or, (3) as contended by other respondents, that it belonged by statute[27] to the kuleana holders and other occupants of land to the extent to which they could use it. The court believed that these latter contentions were now advanced for the first time in the history of the Islands and were possibly contrary to the decision in 15 Haw. 675, and declined to consider them unnecessarily on demurrer in this commissioner proceeding—a statutory proceeding which was intended by the legislature to be simple, expeditious, and inexpensive, and in which in this instance the petition stated the existence of a controversy sufficiently to justify the maintenance of the suit.

The control of the konohiki over surplus waters was again emphasized in a decision on questions of cotenancy submitted to the supreme court upon an agreed statement of facts. The court stated:[28]

> The water demised by the Kahana lease is properly termed ahupuaa, konohiki or surplus water and was never appurtenant to any particular part of the land and is thus distinguished from prescriptive or riparian water rights. It is this class of water which originally the chief or konohiki could dispose of at will irrespective of the rights of the other owners and tenants upon or within the ahupuaa in the prescriptive or riparian waters. *Haw'n. Com. & Sug. Co.* v. *Wailuku Sug. Co.*, 15 Haw. 675.

[26] *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.*, 20 Haw. 658 (1911).
[27] Rev. Laws Haw. 1945, sec. 12901. This matter is discussed hereinafter, p. 100.
[28] *Foster* v. *Waiahole Water Co.*, 25 Haw. 726, 734 (1921).

The owners of the cotenancy, by virtue of the lease, had separated the konohiki water rights from the lands of the ahupuaa;[29] they had therefore created out of the common property an easement in gross, which they had recognized and dealt with as separate and independent property (at pp. 734-735).

Classification of Stream Water Flowing from One Ahupuaa into Another Ahupuaa

The last of the series of Wailuku or Iao Stream cases was decided in 1904. A decision rendered in 1917 involved a stream on the Island of Hawaii, which flowed through an ahupuaa belonging to the Territory and a lower ahupuaa belonging to the petitioner.[30] The Territory alleged that practically all the waters of the stream had their source upon government lands; and the evidence tended to show that there had been so great a diminution in the normal flow of the stream that, after satisfying the primary rights of petitioner and of individual respondents to water for domestic use, there remained a comparatively small quantity available for other purposes.

The allegation of the Territory that practically all the water originated on Territorial land was stated in the opinion (at p. 50), but the point and its implications were not discussed by the court. In the adjudication (at pp. 70-71) vested appurtenant rights for domestic use were given first consideration; next came rights to the use of the "surplus normal flow, if any" for irrigation purposes to the extent of the quantity according to custom at the time the lands passed into private ownership; and subject to those rights, it was adjudged that the Territory was the owner of all the waters of the stream to the exent of the "ordinary or normal flow," the reason why the Territory was held to own such normal surplus waters not being stated.[31] The "surplus flood and freshet waters" of the stream were held subject to the reasonable use of the owners of the ahupuaas through which the stream flowed, in accordance with principles of the common-law doctrine of riparian rights.

Thus this decision for the first time, in determining rights of use, set the "surplus flood and freshet" waters of a stream off from the so-called "normal flow." It was stated that, while it had been decided that the surplus waters of a stream flowing through a single ahupuaa belonged to the ahupuaa, as between the ahupuaa and kuleanas therein or portions of the ahupuaa conveyed without rights to surplus water, nevertheless the question here presented as to the rights in the surplus waters of a stream flowing

[29] Shortly after the execution of the lease, one of the cotenants sold his interest to the lessee. In a contest over the taxation of the water right so purchased, which also included purchased rights other than those involved in the lease, the supreme court stated that there was no illegality or error in assessing the water rights separately from the ahupuaa to which formerly appurtenant, that by the acts of the purchaser and its grantors the water rights were severed in ownership from the lands and could no longer be regarded, for purposes of taxation, as appurtenant to the lands: *In re Taxes, Waiahole Water Co.*, 21 Haw. 679, 682 (1913). See p. 133, below.

[30] *Carter* v. *Territory of Hawaii*, 24 Haw. 47 (1917).

[31] In *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 390-391 (1930), Chief Justice Perry referred to this holding in the *Carter* case and stated that "apparently" the reasons for so declaring, without any statement of the reasoning in that connection, were that the court was unable to determine from the evidence the precise quantities of water to which petitioner's lands were entitled (although finding that they were entitled to some water), and that petitioner had stipulated willingness that the Territory's works should remain, subject to whatever water rights should be decreed to petitioner. The personnel of the supreme court at the time of the *Gay* decision was entirely different from that of the court that rendered the *Carter* decision.

from one ahupuaa into another was one of first impression, and that it must be settled according to the principles applicable to riparian rights at common law. The principle has not since been overturned; for while Chief Justice Perry in a later case[32] made a strong argument for disapproving the riparian principle expressed in the *Carter* case, the majority of the court held only, as set out in the syllabus by the court, that the riparian doctrine was not in force in Hawaii with reference to the surplus normal flow. As a matter of fact, it was only title to the "normal daily surplus" waters that was directly in issue in the *Gay* case.

Application of the Rule to an Ili Kupono

An ili kupono, as noted in the chapter dealing with land titles (see p. 41), originally had an identity separate from that of the ahupuaa within the outer boundaries of which it may have been situated and its konohiki was subservient directly to the king and not to the konohiki of such ahupuaa. Such an ili was therefore not of "lesser degree" in dignity than the ahupuaa and not inferior in its right to the use of water arising within the ili.[33]

In the case cited in the preceding footnote, which arose on the Island of Kauai, two independent ilis comprised the mauka (inland) portion of an ahupuaa, and were drained by stream systems which converged and thence flowed through the lower portion of the ahupuaa to the sea. The greater portion of the water within the ahupuaa arose in these ilis. From one of the ilis water was being diverted for the irrigation of lands lying within an entirely different ahupuaa. There was no contest over the prescriptive or appurtenant rights of kuleanas, or over flood or freshet water; the sole issue at the trial being title to the "normal daily surplus" arising within the ilis, such surplus being water not required to satisfy ancient appurtenant rights and established prescriptive rights.

This normal surplus, as distinguished from the freshet surplus water, the supreme court held by a concurrence of two of the three justices, was the property of the konohiki of the ili to do with as he pleased. The result in this case was that the Territory, as owner of the ahupuaa, was held not entitled to restrain a diversion of the normal surplus from an upstream ili kupono to lands of another ahupuaa, notwithstanding the fact that such water if not diverted would flow through the ahupuaa of which the ili formed a geographical though not a legal part, and if not so diverted would be available for use on such lower lands.

This decision, therefore, places an ili kupono on the same basis as an ahupuaa, in determining rights in the normal flow of a stream that crosses two konohiki units of land. The ili kupono, if upstream, is entitled to all the normal surplus, just as in case of an upstream ahupuaa, and with respect to the normal surplus the riparian doctrine does not apply. Rights in the surplus freshet waters were not directly involved and were not passed upon. The ruling in the *Carter* case, which applied the riparian doctrine to the surplus freshet waters of a stream flowing from one ahupuaa to another, was not affected by this decision, although it was discussed at length in the three opinions filed. Inferentially, as a result of the *Gay* decision, which accords to an ili kupono the same rights it would have if it were an ahupuaa,

[32] *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 389-403 (1930).

[33] *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 380-382 (1930); affirmed, 52 Fed. (2d) 356 (1931); certiorari denied, 284 U. S. 677 (1931).

the principle of the *Carter* case with respect to surplus freshet waters would apply as between an ili kupono and an ahupuaa, as well as between two ahupuaas.

Legal Basis for a Distinction between Normal Flow and Freshet Flow of Stream Water in Determining Rights of Use

None of the literature to which the present writer has had access indicates that, in ancient times, the waters of a stream were divided into normal or low-water flow, and freshet or high-water flow, in creating or adjusting rights of use. Apparently the Hawaiians were interested only in the normal or usual flow, which they diverted and used for the irrigation of kalo (taro) and for domestic purposes, and to which their customs thus applied. They did not develop means of storing freshet water for future use, or of diverting the high flood flows, and so had no custom relating to freshet flow as distinguished from normal flow. Rights by custom to the overflow and seepage from loose dams (see p. 126, below) were not an exception, for they applied simply to the flow that came down the stream.

Nor does any distinction between normal and freshet surplus waters appear in the supreme court decisions rendered during the nineteenth century. The court in one of the Wailuku (Iao) decisions,[34] rendered in 1904, divided the waters into physical classes, and then in the next sentence divided them into legal classes to which rights attached without regard to the physical classification (see p. 72, above). Throughout the remainder of the decision no distinction based upon character of stream flow was made in discussing these rights of use.

The only supreme court decision in which a distinction between freshet and normal flow actually has been impressed upon rights of use is in the *Carter* case. That was done in passing upon the claim of the downstream owner to the surplus freshet water as it flowed into and upon the downstream ahupuaa, thereby overruling the decision of the commissioner that all the flow, surplus and storm water as well as normal flow, belonged to the upstream ahupuaa, subject to individual rights. There was no extended discussion of the reason for making a distinction based upon character of the flow; the question of rights as between two ahupuaas was stated to be one of first impression, which must be decided according to common-law principles.

Subsequently, in his opinion in the *Gay* decision,[35] Chief Justice Perry stated:

> It is my opinion that there is no distinction in history, in principle, or in law between surplus waters of the normal flow and surplus waters which come in freshets as a result of storms. * * *

He considered the application of the distinction in the *Carter* case unsound, and believed that the ruling in that case as to riparian rights should be disapproved. Justice Banks stated in a dissenting opinion in the *Gay* case (at p. 409):

> I fully agree with the chief justice that the ownership of all surplus water, whether it be normal or storm, should be governed by the same rule. Our disagreement arises out of what that rule should be. * * *

[34] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 680 (1904).

[35] *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 393 (1930). Incidentally, the opinion of the court in the Wailuku (Iao) Stream decision on the merits, reported in 15 Haw. 675, was written by Justice Perry.

He believed the riparian ruling in the *Carter* case to have been sound, and thought that it should be applied to normal as well as to storm surplus waters. Justice Parsons, who concurred in part in the *Gay* decision, dissented (at p. 404) from that portion of the opinion of the chief justice which disapproved of the *Carter* ruling,—

> to the extent that the latter case applies the common-law rule of riparian rights to surplus flood and freshet waters—and this for the sole reason that such disapproval is not necessary to a determination of the issues before us. * * *

He emphasized that the right to surplus storm and freshet waters was directly in issue in the *Carter* case and was not directly in issue in the case at bar, and therefore dissented to this extent but "without expressing any view as to how the question should be ultimately determined" (at p. 408). Thus two of these justices in the *Gay* decision agreed that in determining the rights of use of surplus water there should be no distinction between normal and flood flow, though disagreeing as to the rule that should govern those rights, while the third withheld his views because the matter of flood flows was not in issue.

Regardless of differences of opinion as to the soundness of a legal distinction between normal and flood waters, in determining rights of use, the one ruling based upon it must be considered as stating an extant principle of Hawaiian water law.

Summary of Principles

The principles that govern rights to the use of "surplus" waters of streams, which have become of great economic importance in the Territory, may be summarized as follows:

(1) Surplus waters are those of a stream in excess of the quantities required to satisfy established rights including ancient appurtenant rights, prescriptive rights, and rights conveyed by deed.

(2) An ili kupono is of the same degree as an ahupuaa, with respect to water rights, and receives the same consideration in this respect as it would receive if it were an ahupuaa. Thus an upstream ili kupono has the same rights as against a downstream ahupuaa that an upstream ahupuaa would have. This applies even as between an ili kupono and the ahupuaa within the outer boundaries of which the ili is located.

(3) Where a stream system is confined to a single konohiki unit (ahupuaa or ili kupono):

(a) All surplus waters of the stream belong to the konohiki to do with as he pleases.

(b) The surplus waters are not appurtenant to any particular part of the unit.

(c) The surplus waters may be diverted by the konohiki to lands outside the unit, provided of course that the diversion does not impair established rights of individuals within it.

(4) Where a stream system extends through two or more konohiki units (ahupuaas or ilis kupono, or both):

(a) The surplus waters of the *normal flow* belong to the konohiki of the unit within which they arise, to the same extent as in case of a stream that lies entirely within one unit, notwithstanding the fact that

if not diverted they would flow into a lower unit. Riparian rights do not attach to the surplus normal flow.

(b) The surplus waters of *flood or freshet or storm flows* are subject to use by the konohikis of the several riparian units in accordance with principles of the common-law doctrine of riparian rights.

Excess Waters from Irrigation of Upper Lands

Only a portion of the water that is applied in the irrigation of land is "consumed" in transpiration through the plants and evaporation from the soil surface. Some of the water diverted for irrigation is a necessary vehicle for conveying to the place of use the portion to be consumed there. Part of this excess water drains from the irrigated land over the surface, in channels or in diffused flows, and part of it sinks into the ground. The portion that disappears from the surface becomes part of the local groundwater supply and takes on the characteristics of such ground water; and depending upon the local physical situation, some of this water unless removed by artificial drainage may reappear in the form of seepage springs, and a substantial portion may augment the flow of a surface stream.

The excess water from irrigation diversions on the mainland is often referred to as "waste." This term is not always the most appropriate, even on the mainland. Still less is this so if applied to the ancient Hawaiian methods of irrigating kalo or taro, where the excess water was immediately used upon lower lands to which it flowed directly from the upper patches, or was promptly drained into a lower auwai or back into the stream from which diverted, in any case being made available to the next lower users under an orderly system of diversions and uses. However, recognizing the fact that even under the best methods of irrigation some so-called "waste" is inevitable, for the purpose of considering rights of use "waste water" may be taken to be principally water that has escaped from conduits or structures in course of distribution or from irrigated lands after application to the soil,[36] and "return flow from irrigation" as that portion of water diverted for purposes of irrigation which eventually finds its way back to the stream from which diverted, or to some other stream, or which would do so if not intercepted by some natural or physical obstacle.[37] The water that is used in Hawaii in irrigating successive terraces of land is therefore excluded from the definitions of waste water and return flow, so long as it remains on the group of patches of land which the combined flow is intended to irrigate.

Excess from Irrigation of Upper Terraces

In tracing the development of irrigation in Hawaii, Wadsworth states that flat culture of taro (kalo) was common, and that:[38]

> When this method was used low levees were thrown around conveniently shaped areas of land and water admitted from the neighboring auwai. Apparently water was admitted to each basin from the one above it, if not from the auwai itself, drainage from the last patch finding its way into the original stream or another ditch.

[36] "Selected Problems in the Law of Water Rights in the West," U. S. Dept. Agr. Misc. Pub. No. 418 (1942), by Wells A. Hutchins, p. 23.

[37] "Policies Governing the Ownership of Return Waters from Irrigation," U. S. Dept. Agr. Tech. Bul. No. 439 (1934), by Wells A. Hutchins, p. 2.

[38] Wadsworth, Harold A., "A Historical Summary of Irrigation in Hawaii," The Hawaiian Planters' Record, Vol. XXXVII, No. 3 (1933), p. 134.

Apparently in some cases the kalo patches of different tenants were supplied successively and directly from a single auwai; while in other cases water was diverted in the first instance into one high-lying basin, from which the overflow passed to the adjoining lower basin or terrace through openings or low places in the levee, as well as by seepage, and so on down to the terrace at the lowest level, from which the excess water drained back into the natural stream from which the water was originally diverted or into a lower auwai. Whether this latter method was common or rare, it seems to be agreed that it existed;[39] and its current existence in the course of the present study was noted on the Island of Oahu.

The fact that this was not only ancient but extant practice has been noted in several cases in the Supreme Court of Hawaii. In the earliest reported decision on water rights, Chief Justice Allen, in distinguishing the facts before him, referred to "the case of adjacent proprietors of kalo lands, when water is supplied from one kalo patch to another."[40] A case decided in 1892 involved a controversy over the interception of water that the holder of lower land had been accustomed to receive "for an indefinite time" from adjoining kalo land.[41] The head note states:

> Evidence of an ancient flow of water from kalo land to lower land, and use of the same for cultivating the lower land, tends to prove an easement of the lower land in such flow.

And in the opinion of the court it is stated:

> The evidence is convincing that this acquisition and use of the water from the patches of the land above is an ancient right. This conclusion is supported by the position of the premises, which is such that they naturally must receive the waste water from the adjoining wet lands above, which circumstance alone is often sufficient to account for the growth of a water right under the ancient Hawaiian system of irrigation.

Again in 1898, an opinion written by a different justice states:[42]

> The land of plaintiff adjoins the land of defendant and is at a lower level, and the water was accustomed to flow through defendant's kalo patch to the kalo land now held by plaintiff. That plaintiff's land was so watered when cultivated in kalo by its former owner is testified to and is also evidenced by the fact that if a ditch should be made leading around defendant's land it would deliver the water at too low a level to flow on the plaintiff's land. Kalo patches watered from the same source are generally constructed in terraces one below the other, so that the water after filling the upper patches can supply those lower. * * *

Where the right of a kuleana holder to receive the excess water from irrigation of adjacent higher lands has been established as an ancient right, then, the upper owner will be enjoined from diverting the excess water elsewhere so as to prevent it from reaching the lower land in the accustomed manner.[43]

However, the burden is upon the lower landowner to establish by a preponderance of the evidence the right that he claims. Where the evidence

[39] "By the aid of smaller branch ditches each land received its share of water. * * * In still other instances, comparatively rare, however, the patches were given water merely by overflow or percolation from adjoining patches and not directly from any watercourse." Perry, Antonio, "A Brief History of Hawaiian Water Rights," Thrum's Hawaiian Annual 1913, pp. 90-99.

[40] *Peck* v. *Bailey*, 8 Haw. 658, 668-669 (1867).

[41] *Ing Choi* v. *Ung Sing & Co.*, 8 Haw. 498 (1892).

[42] *Wailuku Sugar Co.* v. *Hale*, 11 Haw. 475, 476 (1898).

[43] *Ing Choi* v. *Ung Sing & Co.*, 8 Haw. 498 (1892); *Wailuku Sugar Co.* v. *Hale*, 11 Haw. 475 (1898).

that the ancient right or a prescriptive right to receive water from a specific source, across certain lands, is conflicting and uncertain, injunction will not issue.[44]

Waste Water

Water which a lower landowner claims the right to receive as overflow from adjacent irrigated lands, under the ancient method of irrigating such lands in terraces, is not considered for the purpose of this discussion as waste water. Although so termed in one of the supreme court decisions,[45] which nevertheless recognized an ancient right to the continuance of the flow, it would appear, rather, that this is essentially water received under a customary method of distribution.

The distinction between water of this class, and waste from irrigation, was made in *Peck* v. *Bailey*.[46] One of the points involved a claim to the continued flow of surplus water from kalo lands lying across the road, the surplus from time immemorial having collected in a ditch bordering the road and flowed across to the claimants' lands. The evidence showed that the kalo lands across the road were watered from a ditch the original purpose of which was to water those lands only. This situation was distinguished from the case of proprietors of adjacent lands, where water was intentionally and customarily supplied from one kalo patch to another, or a case in which the konohiki had laid out a viaduct to supply several lands or a series of kalo patches in which the water flowed from one to another. The case at bar, it was held, involved merely a right to use the water as long as it continued to flow. An adverse right to an easement, it was held, could not arise from a mere permissive enjoyment for any length of time; the water was not claimed as a matter of right, and merely the reception of water from the drainage could create no right to oblige the owner of the kalo land and his grantees forever to use the land for the exclusive purpose of kalo. In other words, the distinction was made that this was waste water resulting merely from drainage, not in a watercourse or under a claim of right by the lower landowner; and to such flow of water no prescriptive right could be acquired, however long the overflow may have continued.

The foregoing decision was subsequently cited to support the statement that a prescriptive right could not be acquired to mere drainage water, whether on the surface or underground, under the circumstances of the case at bar.[47] In this instance the natural surface drainage was toward claimants' lands; but they claimed that certain water reached their springs by seepage, whereas the direction of the subterranean flow was uncertain.

So far as the point has been decided, then, prescriptive rights have not been recognized in the continuance of mere surface drainage as distinguished from overflow from irrigation from adjacent lands under an ancient right or long-established and acknowledged custom of distributing water.

[44] *See Yick Wai Co.* v. *Ah Soong*, 13 Haw. 378, 381 (1901).
[45] *Ing Choi* v. *Ung Sing & Co.*, 8 Haw. 498 (1892).
[46] 8 Haw. 658, 668-670 (1867).
[47] *Wong Leong* v. *Irwin*, 10 Haw. 265, 270 (1896).

Return Flow from Irrigation

The excess water which reenters a natural watercourse after being used for irrigation is an important part of the supply of downstream users in various communities. These users have come to depend upon it; and where that fact has been established, particularly as the result of ancient custom, these downstream users have been upheld in contending that the excess waters be not diverted elsewhere to their injury. This is not construed as a right to have the upstream lands continuously irrigated in order that the excess water be made available for others; it simply means, apparently, that alterations in upstream practice are allowable only to the extent that the downstream claimants are not thereby deprived of water that they have been using under their ancient rights.

The right to the use of water that was essentially return flow from irrigation was involved in a decision rendered in 1891.[48] Water from springs on the land of defendant arose in kalo patches surrounded with banks, the excess flowing by percolation through the banks or through small openings in the banks into a natural watercourse which was fed also by other springs. Plaintiff's kalo patches were irrigated from an auwai taken out of the stream, below, and it was held that he had acquired a right by prescription to use the water. The defendant had diverted the excess water from his patches to other purposes; and as this was shown to be a manifest injury to plaintiff, the judgment of the commissioner in ordering the removal of the diversion flume was affirmed.

The question of rights to the use of return flow was given particular consideration in a proceeding brought for the settlement of water rights for all of the wet lands in Palolo Valley, Oahu.[49] The plaintiff claimed the right to divert, for use on a tract of land which the court found had no ancient right and for which no right by prescription had been acquired, the water to which unused portions of its land having appurtenant rights were entitled. The court held that this might be lawfully done, provided others were not injured, which meant here that only as much water could be so taken as would be consumed on the land itself in the cultivation of taro. As to this (at p. 563):

> The distinction here sought to be made is material because, as we find from the evidence, the waters passing by seepage and overflow to adjoining lands and subsequently into one or the other of the main streams are, especially in the dry seasons, a real and an important part of the supply for such adjoining lands and for other lower lands and are a part of the supply to which such dominant lands are entitled.

Further references were made to the necessity of allowing surplus waters to pass by seepage or overflow into the streams or upon lands entitled to water, and the general principle was stated (at p. 569) that:

> Throughout the valley all seepage and overflow needed on wet lands below should be permitted to flow on the adjoining wet lands or into one or the other of the streams, directly or indirectly.

Whether downstream or lower lands are entitled to the use of the return water, however, necessarily depends upon the state of proof. In a case referred to above in discussing waste water, the downstream claim-

[48] *Kahookiekie* v. *Keanini*, 8 Haw. 310, 311-312 (1891).

[49] *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 561-569 (1904); rehearing denied, 16 Haw. 52 (1904).

ants contended that by the diversion of upstream water out of the watershed, they were deprived of the seepage that otherwise would flow from the formerly irrigated upstream lands and would appear in lower springs.[50] The surface drainage was toward the downstream claimants' lands, but the direction of subterranean flow of the seepage was uncertain. Hence, under these circumstances, it was held that no prescriptive right to the flow of the seepage could be acquired.

Diffused Surface Waters

Very little litigation has reached the supreme court over diffused surface waters—that is, waters which, in their natural state, occur on the surface of the earth in places other than watercourses or lakes or ponds—and no cases have been found in which rights to the use of such waters have been specifically in issue.

It has been noted heretofore that a landowner is entitled to the use of water that originates on his land, subject only to rights that others have acquired, such as by prescription (see p. 67). While this has not been decided with reference to diffused surface water, there is no apparent reason why the general principle should not be applicable.

It has also been noted that prescriptive rights have not been recognized in the continuance of mere surface drainage (see p. 80), which would be the case with diffused flows of natural surface waters. In *Davis* v. *Afong,*[51] a prescriptive right to the flow of certain water was upheld because the water was "in known and ascertained channels." In *Peck* v. *Bailey,*[52] the vesting of a prescriptive right in the mere reception of water from drainage was denied; and while this drainage originated from the irrigation of land, and not from precipitation or other natural causes, the arguments set forth in support of the principle would apply with equal force to the drainage of natural flows of diffused character from upper land, which the owner of such land might intercept for his own use. And the principle was reiterated in *Wong Leong* v. *Irwin,*[53] although in this case the claim made was to the flow of seepage underground and the reference to surface water was by way of illustration only.

Hence, while the question does not appear to have been squarely decided, it may be reasonably inferred that the owner of land on which diffused surface waters occur would have the right as against a lower landowner to make use of such waters in the reasonable use of his own land. Where, on the other hand, the maintenance of an ancient right of use from a stream is shown to depend upon the continued and accustomed flow of diffused surface waters within a watershed into the stream, a question may be raised as to whether the upper landowners would be permitted to intercept and divert these waters away from the area for purposes other than the reasonable use of their own lands in such area.

Questions involving the drainage of diffused surface water, other than rights of use of the water, are discussed elsewhere in this report (see p. 205).

[50] *Wong Leong* v. *Irwin,* 10 Haw. 265, 270 (1896).
[51] 5 Haw. 216, 222-223 (1884).
[52] 8 Haw. 658, 668-670 (1867).
[53] 10 Haw. 265, 270 (1896).

Classification of Established Water Rights

The legal connection between water and land—their titles and use—is important in Hawaii, as in other jurisdictions. The ancient rights relate definitely to land areas, whether ahupuaa, ili, or kuleana. Prescriptive rights have been acquired in some cases against the holders of lands to which ancient rights attached. Riparian rights, to the extent to which the riparian doctrine has been engrafted in modern times upon the ancient system, necessarily relate to specific land areas. And the statutory rights to water for domestic use that have been accorded to the occupants of ahupuaas to which konohikis have taken title, while held to be rights in gross and not appurtenant to particular lands, are necessarily confined to those who live on lands within such an ahupuaa. The fact that ancient rights may be legally transferred away from lands to which they have attached does not alter the basic relationship between water and land, for upon the transfer the rights become appurtenant to the new lands.

The classification of established water rights thus begins with the ancient rights, which in turn are divided into those of the primary units, ahupuaas and ilis kupono,[54] on the one hand, and those of kuleanas that have been awarded to individuals out of such primary units, on the other hand. The rights of these kuleanas were termed "prescriptive" in the early decisions, but in the usual case they were originally permissive, not adverse, and continued to be permissive down to the time the tracts were awarded to the individual occupants; consequently in the later decisions the court has used the more nearly accurate designation of "ancient appurtenant" rights. Such rights are recognized as against the holders of the primary units. Truly prescriptive rights against the konohiki, and those against the holders of ancient appurtenant rights, form another class of established water rights. After providing for these ancient appurtenant and prescriptive rights, the konohikis have title to all the surplus stream waters by virtue of their ownership of the primary land units, subject only to the existence of water privileges of which they have specifically divested themselves by deed or lease and to the statutory right of lawful occupants of lands in their domain, without appurtenant rights, to use water for domestic purposes. Where two or more primary units are involved—that is, where a stream flows from one to another—the rights of the several konohikis as against each other depend upon the character of the flow; and in this connection the classification of water rights includes riparian rights.

Doctrine of Prior Appropriation Not Recognized

The waters of the streams of Hawaii are essentially private, not public waters. They have never been dedicated to the public or to the Territory, as has been done in various Western States. They originally belonged to the king as owner of all the land, and thereafter became vested in the owners of the primary land units upon the passing of title to such units. Individual rights as against the owners (konohikis) have been acquired by ancient usage, adverse use, and grant. This leaves no room for a class of appropriative rights of the type so important in the Western States (unless, of course, the government should elect in the future to apply that system to waters that

[54] Although the ahupuaa is termed the primary unit of land, the ili kupono has been accorded in the water cases the same rights that it would have if it were an ahupuaa. Hence for the purpose of classifying water rights the ili kupono is being considered a primary unit of land.

belong to government lands), and the doctrine of prior appropriation has never been recognized in the Islands.

Introductory remarks by the court in *Lonoaea* v. *Wailuku Sugar Co.*[55] included a statement to the effect that a sugar plantation had impounded in its reservoirs surplus freshet water that otherwise would escape to the sea; that the conservation of storm water was free to all who desired to "appropriate" it, but would become objectionable if any party should take all the storm water and deprive others of the opportunity to do the same. These observations apparently had no reference to the doctrine of prior appropriation and have never been so understood. In any event, as explained in a later decision,[56] which was in no way concerned with appropriative rights but was concerned with rights to surplus waters, these were "merely general introductory observations such as are frequently made in water cases. They were not intended to fix the rights of the parties." Further: "The court meant to remark in substance merely that it was better to use surplus water than to allow it to run to waste, and that any one could use it so long as the rights of others were not prejudiced thereby."

It was stated in *Carter* v. *Territory of Hawaii*[57] that:

> The law of priority of appropriation which prevails in the arid sections of the mainland of the United States has never been recognized in this jurisdiction. * * *

Ancient Rights of Ahupuaas and Ilis Kupono

Originally the king owned all the water, for he owned all the land and all natural resources, as shown in the preceding chapter (see p. 21).[58] The grant of an ahupuaa to a chief carried with it all natural resources thereon except what the king reserved for his own use; and a common reservation in such grants was an ili located within the ahupuaa, with impliedly the natural resources, including water, found upon the ili (see p. 41). As such an ili (called ili kupono, ili ku, or independent ili) was reserved by the king, the chief or konohiki of the ahupuaa had no control over it. That the use of water of an ili kupono belonged to the king as konohiki of the ili and to his successor in title, and not to the chief or konohiki of the ahupuaa of which such ili formed only a geographical part, is the view of the Territorial Supreme Court.[59] This matter has been discussed heretofore (see pp. 42 and 75). This exemption, however, applied only to an ili kupono, and not to an "ili of the ahupuaa," for the latter unit was created by the konohiki of the ahupuaa for his own convenience and had no existence separate from that of the ahupuaa.

Thus, as brought out in the discussion of rights to the use of surplus waters of streams (see p. 73), the konohiki of the ahupuaa or ili kupono had as his ancient heritage the unqualified right of use of all surplus waters

[55] 9 Haw. 651, 659 (1895).

[56] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 14 Haw. 50, 64 (1902).

[57] 24 Haw. 47, 57 (1917).

[58] It is stated in *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 680 (1904): "Originally the King was the sole owner of the water as he was of the rest of the land and could do with either or both as he pleased. In later years, the rule seems to have been for him not to dispossess tenants of their lands except for cause and to that extent, perhaps, he would not have deprived cultivators of the water to which their lands were by usage entitled. But no limitation, so far as we can learn, ever existed or was supposed to exist to his power to use the surplus waters as he saw fit."

[59] *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 380-382 (1930); affirmed, *Territory of Hawaii* v. *Gay*, 52 Fed. (2d) 356 (C. C. A., 9th, 1931); certiorari denied, 284 U. S. 677 (1931).

of streams that lay entirely within such land unit—and his successor has the same right—the surplus waters being those in excess of the quantities necessary for the satisfaction of established rights of individuals. Holders of kuleanas or other lands within the ahupuaa having ancient appurtenant rights, and holders of prescriptive rights or water rights conveyed by deed, have been scrupulously protected as against the konohiki. But subject to such established rights, the konohiki (meaning the present owner of the ahupuaa or ili) may use the surplus waters as he pleases,[60] either within or outside the ahupuaa or ili.[61] These surplus waters are not appurtenant to any particular portion of the ahupuaa.[62]

The same principle of an unqualified right of use applies to the *surplus normal flow* of a stream that arises within an ahupuaa or an ili kupono and that flows thence into a lower ahupuaa; the konohiki of the unit on which the waters arise having the exclusive right of use.[63] Rights to the use of the *surplus flood waters* in such case, however, are qualified by the rights of the konohiki of the lower ahupuaa; that is to say, the respective rights of the konohikis in the surplus flood flows are to be determined by the principles of the riparian doctrine.[64]

Lele

The contention was made in a fairly early case[65] that a tract of land was entitled to water from the Ahupuaa of Waiehu because it was a "lele" (detached portion) of that ahupuaa. The justice to whose final decision the question was submitted, concluded that the judgment of the commissioners in awarding water to the land was evidently founded upon the idea that the tract was a lele of the ahupuaa. However, the award of the land commission had not been introduced in evidence, and so the fact that the tract was a lele had not been proved.

> * * * until proved, the discussion as to whether a "lele" of an Ahupuaa lying outside of its boundaries is entitled to be watered from the Ahupuaa would be idle.

It is believed that the specific question of the water rights of a lele has not been passed upon by the supreme court. However, the surplus water to which the konohiki has title may be used by him on any lands, either within or outside the ahupuaa, which of course would include his leles; and as the conveyance by the konohiki of a portion of his ahupuaa, without express mention of water privileges, includes the water rights then appurtenant to it but only those rights (see discussion of conveyances by konohikis, pp. 99-100 below), the same principle should be applicable to a lele as to land within the main boundaries of the ahupuaa. Unquestionably a lele would be entitled to its ancient appurtenant rights. If there were no ancient rights based upon actual use, no prescriptive rights, and no water rights conveyed specifically

[60] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 680 (1904). See *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 70 (1917), and *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 384-388 (1930).

[61] *Foster* v. *Waiahole Water Co.*, 25 Haw. 726, 734-735 (1921); *In re Taxes, Waiahole Water Co.*, 21 Haw. 679, 682 (1913).

[62] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 680-683 (1904); *Foster* v. *Waiahole Water Co.*, 25 Haw. 726, 734 (1921).

[63] *Territory of Hawaii* v. *Gay*, 31 Haw. 376 (1930); see *Carter* v. *Territory of Hawaii*, 24 Haw. 47 (1917).

[64] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 70-71 (1917). Also see *Territory of Hawaii* v. *Gay*, 31 Haw. 376 (1930).

[65] *Wailuku Sugar Co.* v. *Widemann*, 6 Haw. 185, 186-187 (1876).

by grant, it is doubtful if the lele would be entitled to water as against the konohiki of the ahupuaa.[66]

Riparian Rights

Discussions of the riparian doctrine appeared in the earliest reported decision on Hawaiian water law—*Peck* v. *Bailey*[67]—and there were discussions of or references to the doctrine in several succeeding cases. However, it was not until *Carter* v. *Territory of Hawaii*[68] was decided in 1917—just 50 years after the decision in *Peck* v. *Bailey* was rendered—that there was a definite adjudication of a riparian right by the supreme court. The riparian rights adjudicated in the *Carter* case related to the surplus freshet waters of a stream that flowed from one ahupuaa to another ahupuaa. The only other specific holding by the supreme court in the matter of riparian rights has been by way of refusing to extend the principle adopted in the *Carter* decision—by holding, that is to say, that the riparian doctrine does not apply to the surplus normal flow of a stream.[69]

Adoption of Common Law by Legislature

Discussions of the common law and of its applicability to Hawaiian conditions have appeared throughout the Hawaiian decisions, and common-law rules have been adopted in some cases and rejected in others. On the whole, the court appears to have been friendly to the adoption of common-law principles even before the formal adoption of the common law by the legislature.[70] This trend was thus outlined in a decision of the supreme court rendered in 1901:[71]

> The New Englanders who early settled here did not come as a colony or take possession of these islands or bring their body of laws with them, though they exercised a potent influence upon the growth of law and government. The ancient laws of the Hawaiians were gradually displaced, modified and added to. The common law was not formally adopted until 1893 and then subject to judicial precedents and Hawaiian national usage. Prior to that time the courts were at first without statutory suggestion as to what law they should follow in the absence of statutes, and later were expressly permitted by statute to appeal to "natural law and reason, or to received usage, and * * * the laws and usages of other countries" and "to adopt the reasonings and principles of the admiralty, maritime, and common law of other countries, and also of the Roman or civil law, so far as * * * founded in justice, and not in conflict with the laws and customs" of this country. See Civ. Code, Secs. 14, 823. The courts usually followed the common law when applicable. But they felt free to reject it, and did as a rule when, as in the present case, it was based on conditions that no longer exist, and when it had come to be generally recognized as merely technical and subversive of justice or the intentions of the parties to instruments and when it had in consequence been generally altered or abrogated by statute elsewhere. The question here, unlike that in the United States, was not whether the court should decline to follow a rule, but whether it should adopt a rule. * * *

[66] In *Wailuku Sugar Co.* v. *Widemann*, 6 Haw. 185 (1876), the testimony showed that the land had been anciently watered from the Waiehu Stream, but that water had not been used on the land for a period of more than 20 years prior to the plaintiff's acquisition of the land by purchase. Since the date of purchase, the specific use of water on the land had been for less than 20 years. There was no testimony as to whether there had been an adverse use of the water by others, during the period of nonuser on this land, against which it would be inequitable now to enforce the old easement. The respondents contended that the land in question had been described as "kula" land in the award of the land commission; but the award had not been introduced in evidence. On the whole, the justice who rendered the decision felt that the testimony was wholly inadequate for the determination of the rights of either party. See p. 87, footnote 74, concerning the mention of riparian rights in this case.

[67] 8 Haw. 658 (1867).

[68] 24 Haw. 47 (1917).

[69] *Territory of Hawaii* v. *Gay*, 31 Haw. 376 (1930).

[70] Laws Haw. 1892, ch. 57, sec. 5. This became effective January 1, 1893.

[71] *Branca* v. *Makuakane*, 13 Haw. 499, 504-505 (1901).

The statutory adoption of the common law, in its present form, is as follows:[72]

> The common law of England, as ascertained by English and American decisions, is declared to be the common law of the Territory of Hawaii in all cases, except as otherwise expressly provided by the Constitution or laws of the United States, or by the laws of the Territory, or fixed by Hawaiian judicial precedent, or established by Hawaiian usage; *provided,* however, that no person shall be subject to criminal proceedings except as provided by the written laws of the United States or of the Territory.

The doctrine of riparian rights is a part of the common law of England. Although this apparently has been the case only in modern times (see p. 96, below), the fact that the riparian doctrine is a part of English common law unquestionably has been ascertained by English and American decisions. Hence the attitude of the Supreme Court of Hawaii toward the common law as modified by Hawaiian usage has been important in reaching its decisions with respect to riparian rights.

References to Riparian Doctrine in Early Cases

The decision of Chief Justice Allen in *Peck* v. *Bailey,*[73] rendered in 1867, contained a considerable discussion of riparian rights, probably because counsel on both sides had made frequent reference to the matter. The opinion stated the principles of the common-law doctrine and its limitations; that the right of irrigation, watering cattle, and domestic use of water is incident to an estate if a stream of water runs through it, provided the riparian proprietor does not materially diminish the supply of water or render useless its application by others, but is subject to rights acquired by others by immemorial usage and by adverse use. However, it was emphasized that the principles that governed the rights of riparian proprietors at common law "have very little practical application to this case," and that "If the rights of these parties were limited to those of riparian proprietors, they would be much less than they are." The respective rights of the parties were held to be the ancient appurtenant rights to the use of water from artificial watercourses that had been "doubtless made by the order of some ancient King, and when the late King conveyed these lands to the proprietors, the rights of the water courses, in their full enjoyment, was included as an appurtenance." These ancient rights, which passed under the deeds, were paramount to any riparian rights that might be claimed. It was therefore not necessary in this case to hold that any specific riparian right existed, and none was adjudicated or decreed.

The riparian doctrine was briefly touched upon in two subsequent decisions.[74] In the first of these the court stated that the question as to whether the use of water in an arid climate is a natural want as distinguished from an artificial want would depend to a large extent upon whether the party claiming the use of the water for irrigation is a riparian proprietor; and that the question as to whether lands upon an ancient but artificial watercourse have the incidents of riparian proprietorship would depend largely upon whether such watercourse is accustomed to flow uninterruptedly and with the regularity of the natural stream itself. Of this there was no evi-

[72] Rev. Laws Haw. 1945, sec. 1.

[73] 8 Haw. 658, 661-662, 670-672 (1867).

[74] *Wailuku Sugar Co.* v. *Widemann,* 6 Haw. 185, 187 (1876); *Haiku Sugar Co.* v. *Birch,* 4 Haw. 275, 277 (1880).

dence, and no decision was rendered as to riparian rights. (See pp. 85 and 86, above.) In the second case (*Haiku Sugar Co.* v. *Birch*), which involved the taxation of lands irrigated from a ditch in which the landowners held shares, the court stated that the rights of the parties "are unlike the rights of riparian proprietors," and unlike the ancient appurtenant rights for irrigation. The landowners had not treated their water rights as appurtenant to the lands irrigated, so the property of the ditch company, it was held, was rightly taxed separately from the land. (See discussion of this case, pp. 121 and 131, below.)

The next reference appears to have been in a case decided in 1896, in which it was held that the riparian doctrine had no application to the rights there in issue, which were stated to be prescriptive rights.[75] The question was raised as the result of a contention that water could not be lawfully transferred from one ahupuaa to another, either by common law or by ancient Hawaiian usage. The court went on to say what riparian rights are; how they apply to natural or ordinary purposes, and to irrigation or other so-called extraordinary purposes; and how they may be enlarged by adverse use against other riparian proprietors and converted into superior and absolute rather than correlative rights, in which case the rights of the other proprietors in the portion so converted into a prescriptive right would be extinguished, after which these other proprietors would have no more concern with the exercise of that portion than outside third parties would have. The argument based upon Hawaiian usage was likewise rejected (see p. 137, below). The opinion closed with a refusal to pass upon the application of the riparian doctrine to the lands involved in the litigation, thus (at p. 272):

> In view of the foregoing it will be unnecessary to consider the question of the application of the doctrine of riparian rights to the conditions existing in Kailua, or in these lands generally, or the interesting arguments and evidence adduced in this case on the supposition that the court might find it necessary to pass upon this question.

A decision[76] rendered about a month later, which involved the maintenance of a dam in a stream and its effect upon the overflow of upstream lands and upon the drainage of rice fields on those lands, contained a concurring opinion written by Justice Whiting, who had participated in the decision in the *Wong Leong* case. He stated that the case here presented was very unsatisfactory, and "does not present such a clear and distinct issue as will enable me to decide upon the questions of law involving prescriptive and riparian rights, and how far the common law of England in relation thereto is applicable to the conditions of this country in regard to water." From this language, it is reasonable to infer that Justice Whiting felt that whether the riparian doctrine had been definitely adopted in Hawaii as a part of the common law, notwithstanding previous expressions of the courts with regard to riparian rights, was still unsettled.

Several years later the matter of riparian rights was involved on a point of pleading, in an action for trespass in interfering with water claimed by plaintiff.[77] Defendant filed a plea to the jurisdiction of the district court (see p. 49, above), claiming (among other points) ownership of riparian

[75] *Wong Leong* v. *Irwin*, 10 Haw. 265, 270-272 (1896).
[76] *Cha Fook* v. *Lau Piu*, 10 Haw. 308, 313 (1896).
[77] *Brown* v. *Koloa Sugar Co.*, 12 Haw. 409, 411-412 (1900).

land entitling it to the use of water. The plea was held good, as the claim of riparian ownership, among other things, put the title to the water in issue. There was no further reference to the riparian doctrine. Another brief and possibly unnecessary reference was made in an action for damages for infringement of a water right, to the effect that the plaintiff at the trial clearly relied for recovery upon the infringement, "not of the natural right which he possessed by virtue of his ownership of the bank to take or use water from the stream on his own land, but of a right claimed by him to have been acquired by prescription to conduct water through an artificial ditch situated in part on the defendant's land."[78] There was no further mention of riparian rights. When the Wailuku (Iao) Stream controversy went to the supreme court on its merits, the decision classified the waters of the stream as (a) surplus water and (b) water covered by prescriptive rights, and defined surplus water as water, whether storm water or not, that is not covered by prescriptive rights "and excluding also riparian rights, if there are any."[79] The syllabus in this case also refers to surplus water as water that is not covered by prescriptive or riparian rights; but aside from this one reference the opinion wholly ignores the subject of riparian rights.

So far as the present writer is aware, the foregoing cases are the only ones in which the Supreme Court of Hawaii had occasion to discuss the riparian doctrine with reference to the use of water for beneficial purposes, prior to the decision in the *Carter* case in 1917. While the court's attention was thus directed to the subject at intervals through the years, much of the discussion of riparian rights in these cases is clearly dictum. The actual points decided were, in one case, that a plea to the jurisdiction was good, where it put in issue a claim of riparian rights—which is not a decision that the right existed—and in other cases, that the doctrine did not control under the facts presented. In no reported case, decided by the supreme court prior to 1917, does it appear that a water right was actually decreed to riparian land on the ground that that land was entitled to the use of water according to the principles of the common-law riparian doctrine.

The Carter Case

The ruling in the *Carter* case[80] with respect to riparian rights, and the reactions of the several members of the court in the *Gay* case,[81] have been discussed heretofore in connection with the classification of surplus waters of streams (see pp. 74-77). The emphasis in that discussion was placed upon the relation of the ruling to the character of the stream flow. These two cases are so important with respect to the question of riparian rights in Hawaii—and are the only ones that in the present writer's opinion really control the question—that it is deemed desirable to discuss the *Carter* holding and the subsequent comments in the *Gay* case further at this point, even though this will involve some necessary repetition.

[78] *Scharsch* v. *Kilauea Sugar Co.*, 13 Haw. 232, 236 (1901).

[79] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 680 (1904). In a dissenting opinion in *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 413-414 (1930), Justice Banks quoted this language and the corresponding portion of the syllabus and stated: "I think it may be reasonably inferred from the foregoing language that the court intended to reserve for future discussion the very question that arose later in the *Carter* case, otherwise the reference to 'riparian rights' would appear to be without significance."

[80] *Carter* v. *Territory of Hawaii*, 24 Haw. 47 (1917).

[81] *Territory of Hawaii* v. *Gay*, 31 Haw. 376 (1930).

The stream in the *Carter* case arose on an ahupuaa owned by the Territory, and flowed down to an ahupuaa in private ownership. A number of important questions were involved. Included among these were abandonment of water rights, ancient appurtenant rights, rights to drinking water declared by statute, the superiority of domestic over irrigation uses, proportional diminution of use in time of water shortage, and change in the method of diversion, and the greater part of the opinion was devoted to these matters. The principal questions, it was stated (at p. 57), were as to what effect the fact of a greatly diminished supply of water in the stream had upon the rights of the parties, and as to the right of the Territory to make a new use of a portion of the water, which use was being made by way of supplying water to the homesteaders on the government ahupuaa.

There was no extended discussion of the riparian doctrine, and no discussion of previous Hawaiian decisions with relation to this doctrine. After stating the principal questions, as above, the court said (at p. 57):

> Private water rights in this Territory are governed by the principles of the common law of England except so far as they have been modified by or are inconsistent with Hawaiian statutes, custom or judicial precedent. R. L. 1915, Sec. 1. * * *

It was then said that the doctrine of prior appropriation had never obtained in this jurisdiction, but that the diversion of water for domestic and agricultural use had been practiced by the Hawaiians prior to the coming of the white man, and that the right to water from ancient ditches which had become incorporated into the topography of the country passed with titles to lands to which the ditches were tributary. At another place (at p. 64) the court repeated its statement that the right to water from ancient ditches for both domestic use and irrigation, in accordance with ancient custom, passed with the conveyance of the land as an incident, and added that this passing of the water right as an incident was "like a riparian right at common law, though it was by public grant." It was also stated (at p. 67) that while the Territory was the riparian proprietor both above and below the points at which water was diverted by the petitioner, the diversion of water to sell to the homesteaders was not the exercise of its riparian right; such use, though highly beneficial, was a new and different use "which could not be exercised to the detriment of the pre-existing vested rights of others."

After disposing of the questions other than riparian rights, the court stated, near the conclusion of the opinion (at p. 70):

> There remains to be considered only the claim of the petitioner to the right to storm or freshet waters of the Waikoloa stream on the *ahupuaa* of Ouli. Where a stream flows through a single *ahupuaa* it has been decided that as between the *ahupuaa* and *kuleanas* therein, or portions of the *ahupuaa* conveyed without rights to surplus water, the surplus waters of the stream belong to the *ahupuaa*. *Peck* v. *Bailey*, and *Haw. C. & S. Co.* v. *Wailuku S. Co.*, *supra*. The question here presented, as to the rights in the surplus waters of a stream which flows from one *ahupuaa* into another, is one of first impression. We think it must be settled according to the principles applicable to riparian rights at common law. That is to say, each *ahupuaa* is entitled to a reasonable use of such water, first, for domestic use upon the upper *ahupuaa*, then for the like use upon the lower *ahupuaa*, and, lastly, for artificial purposes upon each *ahupuaa*, the upper having the right to use the surplus flow without diminishing it to such an extent as to deprive the lower of its just proportion under existing circumstances. Gould on Waters (3d ed.) Secs. 206 et seq.; 3 Farnham on Waters, Sec. 600 et seq.

The specific holdings, among others, were (at pp. 70-71) that the lands of certain parties were entitled, in accordance with ancient custom, to water from the stream for domestic use; that the petitioner was entitled to the surplus normal flow, if any, after all domestic requirements were satisfied, for artificial purposes, to the extent of the quantity to which the lands were entitled therefor by custom when they passed into private ownership; that subject to these vested appurtenant rights for domestic use and to the petitioner's vested irrigation right, "the Territory is the owner of all the waters of the Waikoloa stream to the extent of the ordinary or normal flow"; and finally, "that the surplus flood and freshet waters of the Waikoloa stream are subject to the reasonable use of both the government and the petitioner as owners respectively of the *ahupuaas* of Waimea and Ouli, for the purposes and in the manner above stated."

It was the rule at common law that an upper riparian proprietor might exhaust the entire stream if necessary for so-called "natural" or "ordinary" uses—that is, domestic, household, and watering of domestic animals, and probably irrigation of family gardens[82]—and that under the rule as modified, each proprietor was entitled to a reasonable use of water for so-called "artificial" or "extraordinary" purposes, such as irrigation, in relation to the like reasonable requirements of all other riparian proprietors, and might not exhaust the flow for such purposes to the injury of lower proprietors.[83] The *Carter* decision did not adhere strictly to this distinction, for as shown in the above quotation (from 24 Haw. 70), the upper ahupuaa was given the first use of the water for domestic purposes only to the extent of a "reasonable use," and was not accorded the privilege of exhausting the supply for such purposes.

In the above-quoted paragraph from the *Carter* decision, just referred to, in which principles of the riparian doctrine were adopted, it may be noted that, although the first sentence speaks of the claim of right to "storm or freshet waters," the balance of the paragraph speaks only of "surplus waters," without limitation to any specific portion of the flow of the stream. Furthermore, the syllabus by the court, in addition to stating that "Private water rights in Hawaii are governed by the principles of the common law of England except so far as they have been modified by or are inconsistent with Hawaiian statutes, custom or judicial precedent," contains the following paragraph:

> Where a stream flows through one *ahupuaa* into another each *ahupuaa* is entitled to a reasonable use of the surplus water of the stream according to the principles applicable to riparian rights at common law.

Notwithstanding this, the definite holdings in this case accord (1) to the owner of the upper ahupuaa (the Territory) the entire ordinary or normal flow, subject to vested appurtenant rights on the stream, and (2) to the owners of the two ahupuaas the reasonable use of the surplus flood and freshet waters.

[82] See Gould, J. M., "A Treatise on the Law of Waters," 3d ed., sec. 205, pp. 396 and 397 (Chicago, 1900); Wiel, S. C., "Water Rights in the Western States," 3d ed., vol. I, sec. 740, p. 795 et seq. (San Francisco, 1911). Mr. Wiel states, in a footnote on p. 797, that the distinction of natural uses (and the preference therefor) took actual shape in the English common law in 1858, but had been recognized in America before that time. He cites Western cases and quotes from several of them (pp. 795-796); they were of later date than the Eastern and English decisions that first made the distinction.

[83] See Long, J. R., "A Treatise on the Law of Irrigation," 2d ed., sec. 31, p. 66 (Denver, 1916).

The *Carter* decision, then, for apparently the first time in Hawaiian judicial history, made a specific adjudication of riparian rights. It adjudicated such rights with respect to the *surplus flood and freshet waters* of a stream as between two ahupuaas which were riparian to the stream. It did not adjudicate riparian rights with respect to the *surplus normal flow* of the stream, nor as between lands within one ahupuaa.

The Gay Case

There was no further decision with respect to riparian rights until the *Gay* case[84] was decided in 1930. A passing reference was made in a decision[85] that involved the lease of waters which the court termed ahupuaa, konohiki, or surplus water, never appurtenant to any particular part of the land and thus distinguished from "prescriptive or riparian water rights"; such waters the konohiki could originally dispose of at will irrespective of the rights of others "in the prescriptive or riparian waters." Claims of riparian rights were not in any way involved in that case.

The stream in the *Gay* case arose upon independent ilis, or ilis kupono, which occupied the mauka portion of the Ahupuaa of Hanapepe, and flowed thence across the makai portion of the ahupuaa to the sea. Title to the ilis had passed to private parties, while that of the ahupuaa of which they formed a geographical part was still in the Territory. The owner of the ilis diverted water from the stream within one of the ilis and conveyed the water to the Ahupuaa of Makaweli for the irrigation of sugar cane. The Territory as owner of Hanapepe brought suit to restrain the diversion. The issue at the trial was confined to title to the "normal daily surplus" of water in the stream; interference with ancient appurtenant rights was not involved. As the ilis were ilis kupono, it was held that they were not of less degree and dignity than the ahupuaa, nor inferior to it in the matter of water rights; in other words, that in a consideration of rights to the use of water of a stream that flows from an ili kupono into another portion of the ahupuaa within the outer boundaries of which the ili is located, the ili kupono occupies essentially the status that it would have if it were itself an ahupuaa.

The applicability of the riparian doctrine to the facts of this case, and the effect of the *Carter* decision, were argued before the court. The Territory claimed (at pp. 381-382) that if it should be held that the ilis were not of less degree and dignity than the ahupuaa, they were at least not superior to it; and that hence, under the ruling in the *Carter* case, the surplus waters should be apportioned between the ilis on the one hand and the ahupuaa on the other "in just proportions in accordance with existing circumstances." It was further claimed that as the only relevant circumstances were that there were no arable lands in the ilis without primary rights of their own, or that needed irrigation, and as there was a considerable area of arid arable land in the lower portion of the ahupuaa capable of fruitful production with the use of water, the ahupuaa would be entitled to all of the surplus waters. The owners of the ilis argued (at p. 389) that the court in the *Carter* case actually awarded to the owner of the ahupuaa on which the stream arose all the waters of the "*normal* surplus," and that the decision relating to a division between the ahupuaa of origin and a lower ahupuaa related merely to the "surplus *freshet* waters."

[84] *Territory of Hawaii* v. *Gay*, 31 Haw. 376 (1930); affirmed, *Territory of Hawaii* v. *Gay*, 52 Fed. (2d) 356 (C. C. A. 9th, 1931); certiorari denied, 284 U. S. 677 (1931).

[85] *Foster* v. *Waiahole Water Co.*, 25 Haw. 726, 734 (1921).

Each of the three justices filed an opinion, no one of which was designated as the opinion of the court. The differences of opinion were confined to the question of the relation of riparian rights to surplus waters. The opinion of Chief Justice Perry devoted considerable space to a discussion of the riparian doctrine and to a disapproval of its application in the *Carter* case. He stated (at pp. 394-395) that while "it is, perhaps, technically true" that, as stated in the *Carter* case, private water rights in Hawaii are governed by the principles of the common law of England except as modified by or inconsistent with Hawaiian statutes, custom, or judicial precedent, "that statement is of very little, if any, consequence or significance in view of the widely prevailing Hawaiian customs and the judicial precedents long since established with reference to water rights in this Territory." The Hawaiian system of water rights, he said, was based upon ancient native customs in dealing with water, no modifications having been engrafted upon it by the application of any principles of the common law of England; to apply the riparian principle to surplus freshet water, as was done in the *Carter* case, was entirely at variance with history and judicial precedents. No other Hawaiian case (at pp. 401-402)—not even *Peck* v. *Bailey*—had made any award of riparian rights as such; the riparian doctrine, except for the one feature in the *Carter* case, had never been the rule in Hawaii (at pp. 396-397); it is utterly inconsistent with the system recognized and enforced from time immemorial, and to adopt it now with reference to normal surplus waters would alter established rights; furthermore (at p. 399), "it is not suited to conditions in this Territory." The ancient system (at p. 401) provided more liberally than did the English system in favor of riparian lands and in favor of nonriparian lands, and "is far better suited to the development of the agricultural lands of this Territory." He felt that the ruling of the *Carter* case with respect to freshet water should be disapproved (at p. 394) and that the one partial error in that decision should now be corrected (at p. 403).

Justice Parsons concurred in the opinion of the chief justice so far as it concerned rights in the normal surplus waters; but he dissented from that portion which disapproved of the ruling in the *Carter* case with respect to surplus flood and freshet waters, "for the sole reason that such disapproval is not necessary to a determination of the issues before us" (at p. 404). The case in the trial court had dealt only with normal surplus and presented no issue upon the question of rights to the surplus freshet waters, whereas in the *Carter* case the question of surplus freshet waters was directly involved and was decided (at p. 405). The *Carter* decision, he stated, made a clear distinction between the rule applicable to surplus normal flow and that applicable to surplus flood and freshet waters, and applied the riparian rule to the latter and not to the former (at pp. 407-408). Hence, "without expressing any view as to how the question should be ultimately determined," he refused to concur in that portion of Chief Justice Perry's opinion "which, if concurred in, would overrule the *Carter* case in the particulars above set forth" (at p. 408).

Justice Banks believed the riparian rule announced in the *Carter* case to be inherently just and not inconsistent with preceding decisions, and that it should be applied to normal as well as to storm surplus flow and finally adopted as the law of the Territory (at p. 409). He could not agree with a

pronouncement of the law under which it would be possible to accomplish a disaster such as would be the case if the owner of an ili kupono or ahupuaa "could divert from its natural channel all the water that might originate on his land and utterly waste and squander it," regardless of the need for water on lower lands without prescriptive or appurtenant rights. Such could not be accomplished under the riparian rule, under which the rights of riparian proprietors are correlative, not absolute and exclusive (at pp. 409-410). He quoted at length from the then recent decision[86] in which the correlative doctrine had been applied to ground waters in an artesian basin, and could perceive no just reason for not applying the same rule to surface waters in natural channels (at pp. 410-412). He did not believe the ruling in the *Carter* case (which he characterized "a sound and wholesome doctrine") to be incompatible with the law as declared in earlier cases cited by the chief justice, which had dealt with situations different from those in the *Carter* case and in the instant case. The language in the syllabus in *Peck* v. *Bailey*[87] "is a succinct statement of the riparian rule and is clearly a recognition of it"; the riparian rule was recognized in the *Carter* case; and it "seems to have been in the mind of the court" in one of the Wailuku River cases[88] in which surplus water was defined as water, whether storm water or not, that is not covered by prescriptive or riparian rights (at pp. 412-416). The economic reasons for applying the absolute-ownership rule he considered legally insufficient; the true test of whether a rule should receive judicial sanction being, not whether its application will benefit more people than it will injure, but whether it will deprive a single individual of a right to which he is entitled (at p. 415). And he was not impressed by the suggested danger to the entire Hawaiian water system which would result from applying the riparian rule to normal surplus water (at pp. 416-417).

In view of the three opinions, the actual holdings in this case with respect to surplus waters and riparian rights can best be stated by quoting a portion of the syllabus by the court:

> The normal surplus water (as distinguished from the freshet surplus water) of an independent ili, meaning thereby water that is not required to satisfy ancient appurtenant rights and prescriptive rights, is the property of the konohiki of the ili, to do with as he pleases, even though if left unrestrained by man it would flow through a lower ahupuaa before reaching the sea.
>
> The common-law doctrine of riparian rights is not in force in Hawaii with reference to the surplus waters of the normal flow of a stream,—using the term "surplus waters" in the same sense as in the next preceding paragraph.

The result of the *Carter* and *Gay* decisions, considered together, is that the riparian doctrine applies, as between konohiki units, to the surplus freshet waters of a stream and not to the surplus normal flow.

Criticism of the Riparian Doctrine

The common law doctrine was applied, in the *Carter* case, to surplus freshet waters flowing through more than one ahupuaa because there was no Hawaiian custom applicable to that condition. The court stated that the question was one of first impression, and believed that it must be settled according to principles applicable to riparian rights at common law. Doubtless, on legalistic grounds, the court was justified in reaching that decision.

[86] *City Mill Co.* v. *Honolulu Sewer & Water Commission*, 30 Haw. 912 (1929).
[87] 8 Haw. 658 (1867).
[88] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675 (1904).

The present writer believes that the riparian doctrine, whether applied to surplus freshet waters or to any other waters of a stream, is not well suited to areas in Hawaii, or on the mainland, in which the demand for irrigation water substantially exceeds the supply. As a matter of fact, the matter is probably not of great practical importance in Hawaii, where the characteristic drainage areas are short and steep, where the flood waters of many streams come down in great quantities and flow for brief periods, and where practicable means of storing large quantities of flood water are not available. Nevertheless, as the riparian principle has been engrafted to some extent upon Hawaiian water law, a brief review of the question of its suitability to the irrigation of agricultural land is believed to be in order.

The riparian doctrine was developed under essentially humid conditions, where the supplies of water generally were much greater than the requirements for water, and where irrigation seldom was practiced, if at all. The original rule was that the riparian owner was entitled to have the stream flow by or through his land, undiminished in quantity and unpolluted in quality. The strict application of such rule would have prevented any consumptive use of the stream water from being made—hence the later modification, which resulted in distinguishing natural uses from artificial uses and in according to the riparian owner a reasonable use of the water for irrigation and other artificial purposes. As stated heretofore (see p. 91), this modification appears to have been made first in Eastern and English decisions, in controversies that arose in humid areas, although adopted later in some Western States. Irrigation of crops under typically humid conditions is, on the whole, of secondary importance in agriculture under such conditions, and the supplies of water therefor, other than in the case of crops having exceptionally high water requirements, are characteristically of supplemental rather than primary value. Hence, so long as irrigation remains a secondary consideration, the competition for water seldom is sufficient to overcome the preponderance of supply over demand. It is where the demands for water exceed the available supply—particularly where the aggregate quantities of precipitation on the cropped land and of water from other sources are not enough to satisfy the requirements of all available arable lands—that the suitability of the riparian doctrine to the needs of the particular environment is called in question.

The unsuitability of the riparian doctrine to arid and semi-arid conditions resulted in its complete repudiation in 8 of the 17 Western States. There the areas of good agricultural land are much greater than the areas that can be served with the available water supplies; the unit of water, rather than the unit of land, determines the extent of agricultural development. While the riparian doctrine was adopted in the other 9 Western States and is still recognized in greater or less degree in most of these 9 States, there has been an unrelenting opposition which has resulted in substantially reducing the obstructive aspects of the doctrine, even to the point in Oregon (a considerable portion of which may be classed as humid) of reducing the riparian rule to little more than a legal fiction. The recognition of riparian rights in various States has been productive of unending litigation. The doctrine has contributed very little to the development of irrigation in the West; and even in California, where the riparian principle has been so thoroughly entrenched, the water rights of most of the irrigation projects

are based, not upon the riparian doctrine, but upon statutory appropriation, which in many instances has been made workable because of the vesting of prescriptive rights as against downstream riparian proprietors.[89] In other words, it is safe to say that the great development of surface water supplies in California has proceeded in spite of the riparian doctrine, certainly not because of it.

Precipitation in the Hawaiian Islands presents some remarkably sharp contrasts. It has been shown in the first part of this report (see p. 7), that while the rainfall in the mountains of the larger islands is measured in hundreds of inches, that on some parts of the lowlands near the coast, only a few miles from the high elevations, is less than 20 inches. The truly humid areas are, generally speaking, in the mountains where agriculture is not practiced. Much agricultural land, on the contrary, is deficient in natural precipitation and is therefore regularly dependent upon irrigation. This is not comparable to the situation that prevails in England and in the Eastern States. It is more nearly comparable to the situation in the less arid portions of the West. In some of those Western jurisdictions the common-law riparian doctrine has been discarded as unsuitable, or has been severely restricted in application, while in still others it has been retained on strictly legalistic grounds notwithstanding the inherent weaknesses of the doctrine when applied to irrigation development under arid or semi-arid conditions.

The legislature of Hawaii adopted the common law, so far as not inconsistent with Hawaiian law; and the riparian doctrine is a part of the common law of England. However, it has apparently become so only in modern times. Investigations by Mr. Samuel C. Wiel, a well known authority and careful student of Western water law, have led him to conclude that:[90]

> * * * the common law of watercourses is not the ancient result of English law, but is a French doctrine (modern at that) received into English law only through the influence of two eminent American jurists.

From Mr. Wiel's study it appears that Blackstone's rule of prior appropriation was accepted by the English courts at the beginning of the nineteenth century and as late as 1831; that toward the close of this period, and at about the same time, the American jurists Story and Kent had expounded the civil-law doctrine of "riparian" proprietorship, with emphasis upon the French sources; that subsequently, in 1833, the modern doctrine was first laid down by the English courts in *Mason* v. *Hill,*[91] but without using the

[89] The relation of prescription to the irrigation of nonriparian land in California was brought out in an address before the American Bar Association at San Francisco, August 9, 1922, by Chief Justice Lucien Shaw of the California Supreme Court, "The Development of the Law of Waters in the West." Paper published in Reports of American Bar Association, Vol. XLVII, pp. 189-207, reference at p. 201; also printed in 10 Calif. Law Rev. 443, reference at p. 455; also in 189 Cal. 779, reference at p. 791.

[90] Wiel, S. C., "Waters: American Law and French Authority," XXXIII Harvard Law Rev. No. 2, 133, 147 (1919). See also, by the same author, "Origin and Comparative Development of the Law of Watercourses in the Common Law and in the Civil Law," VI California Law Rev. 245 et seq. and 342 et seq. (1918).

[91] 5 Barn. & Adol. 1, 110 Eng. Reprint 692 (1833). Mr. Wiel says that "Although there were casual expressions more resembling the modern law, the modern doctrine was not laid down in England until the case of *Mason* v. *Hill,* decided in 1833, where Lord Denman undertook 'to discuss, and, as far as we are able, to settle the principle upon which rights of this nature depend.' * * * In any event, until Story and Kent were resorted to by the English decisions in the following decade, the English law still wavered in spite of Lord Denman's effort. * * * There was still this atmosphere of uncertainty when, in *Wood* v. *Waud* in 1849, the ruling in *Mason* v. *Hill* was reiterated by Chief Baron Pollock as having placed the cases for natural streams 'upon their right footing.' " See Wiel, op. cit., XXXIII Harvard Law Rev. 133, 144-146.

term "riparian" or citing either of these American jurists; and that the English law wavered from then on until the decision in 1849 in *Wood* v. *Waud*,[92] in which the term "riparian" was apparently first used by the English authorities, main reliance being placed upon Kent and Story, contention thereby being set at rest. This, then, appears to have marked the definite adoption of the riparian doctrine as a part of the common law of England.

The Supreme Court of Hawaii in the *City Mill Company* case,[93] which dealt with artesian waters, declined to adopt the "so-called 'common-law doctrine'" or English rule of absolute ownership of percolating waters. (See ch. 5, p. 179 and following.) It was pointed out in the opinion of the court that that doctrine "was not in fact a doctrine or rule or principle of the common law of England," the earliest decision rendered by an English court "which in any degree approaches or seems to approach this subject" being *Acton* v. *Blundell*[94] in 1843. Subsequent English cases, it was stated, failed to indicate that there had been any preexisting common law on the subject. The court concluded that it was a misnomer to speak of the absolute-ownership rule of percolating waters as the common-law rule; that there was none such; and that the Hawaiian statute adopting the common law did not apply.

So far as surface streams are concerned, it appears from Mr. Wiel's findings that the riparian doctrine was not settled law in England at least prior to 1833, and that uncertainty was not removed until 1849. And it was in the midst of the period of uncertainty as to whether the riparian doctrine was settled law that *Acton* v. *Blundell* on percolating waters was decided. In other words, it would appear that there was no common-law rule of absolute ownership of percolating waters in England prior to 1843 and no common-law rule of riparian proprietorship prior to that approximate period; yet both have been ascertained as a part of the common law by American decisions. From these historical considerations it would seem to follow that these two rules are in much the same category so far as they became and are a part of the common law of England.

Riparian rights are difficult to administer. They are correlative, not absolute rights, and therefore the use that one riparian proprietor may make of the available flow at a given time depends upon the uses that the other riparian proprietors desire to make at that time. Unless the several proprietors agree upon a division of the available supply, their needs must be ascertained by court procedure and the water apportioned accordingly. This must be done, if freshet flows are riparian waters, before such flows have gone by; and the apportionment thus made does not apply to the next succeeding freshet flow if the relative requirements of the holders of riparian rights have changed in the meantime. Riparian rights are not lost by nonuse of the water, except in the event of adverse use by others; hence, in the absence of prescription, priority in time of use of more than his proportionate share of the water by one riparian proprietor, when the others are not using it, gives him no priority of right to continue the full use which he has been making, if the other riparian proprietors subsequently elect to

[92] 3 Exch. 748, 154 Eng. Reprint 1047 (1849).
[93] *City Mill Co.* v. *Honolulu Sewer & Water Commission*, 30 Haw. 912, 938-943 (1929).
[94] 12 M. & W. 324 (1843).

demand their proportionate shares. These factors not only create uncertainty as to the extent of one's right, but they introduce an element of real hazard into the development of irrigable land where the only right to use irrigation water is a riparian right. The test of the soundness of a water-right doctrine—its applicability to the conditions upon which it is imposed—is the degree of its workability at a time when the supply of water is not adequate for the needs of all who have valid rights to its use. The riparian doctrine originated in areas in which the supply of water exceeded the demand, and it has not proved adapted to areas in which the water requirements of arable irrigable land have exceeded the available water supply.

The riparian doctrine in Hawaii applies, as the result of the two pertinent supreme court decisions (those in the *Carter* and *Gay* cases), to the surplus freshet flow and not to the normal flow. This distinction is the exact opposite of that made in the Western decisions that have classified stream flows to which riparian rights attach.[95] If the doctrine is retained in Hawaii with respect to freshet flows, and if further development is to be predicated upon that principle, decisions may become necessary upon points concerning which there is divergence of authority in the Western States. For example, the strict common-law rule contemplated only temporary or forebay storage of water for milldams, and not seasonal storage; the California and Washington courts have held that a riparian owner may not store water for long periods without making a statutory appropriation therefor, whereas in Texas it has been held that one may store water under his riparian right so far as this can be done consistently with the rights of other riparian landowners.[96] The maximum limit of land having riparian rights is the margin of the watershed in California, Kansas, Nebraska, South Dakota, and Texas, but not in Oregon.[97] The riparian rights of municipalities have been variously construed in the several States.[98]

The question of riparian rights in Hawaii may be more academic than practical, as suggested heretofore (see p. 95). However, if the broad elementary principle stated in the *Carter* decision should be applied in determining water rights on other streams, some refinement to meet the local conditions may become necessary.

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[95] In Nebraska and Texas riparian rights attach only to the ordinary flow, not to flood flows. See *Crawford Co.* v. *Hathaway*, 67 Nebr. 325, 93 N. W. 781 (1903); *Motl* v. *Boyd*, 116 Tex. 82, 286 S. W. 458 (1926). In other States in which the distinction has been in issue, the riparian right attaches to both normal flow and flood flow to the extent that water is needed for and beneficial to the riparian land. See *Peabody* v. *Vallejo*, 2 Cal. (2d) 351, 40 Pac. (2d) 486 (1935); *Eastern Oregon Land Co.* v. *Willow River Land & Irr. Co.*, 187 Fed. 466 (C. C. D. Ore. 1910), 201 Fed. 203 (C. C. A. 9th, 1912); *Still* v. *Palouse Irr. & Power Co.*, 64 Wash. 606, 117 Pac. 466 (1911); *Longmire* v. *Yakima Highlands Irr. & Land Co.*, 95 Wash. 302, 163 Pac. 782 (1917).

[96] See *Herminghaus* v. *Southern California Edison Co.*, 200 Cal. 81, 252 Pac. 607 (1926); *Seneca Consol. Gold Mines Co.* v. *Great Western Power Co.*, 209 Cal. 206, 287 Pac. 93 (1930); *Still* v. *Palouse Irr. & Power Co.*, 64 Wash. 606, 117 Pac. 466 (1911); (also see *Tacoma Eastern R.R.* v. *Smithgall*, 58 Wash. 445, 108 Pac. 1091 (1910)); *Stacy* v. *Delery*, 57 Tex. Civ. App. 242, 122 S. W. 300 (1909) *Chicago, Rock Island & Gulf Ry.* v. *Tarrant County W. C. & I. Dist. No. 1*, 123 Tex. 432, 73 S. W. (2d) 55 (1934). A Kansas statute provides that any person entitled to the use of water for the irrigation of lands or other purposes may store the same for use "presently thereafter." See Kans. Gen. Stats. 1935, sec. 42-313.

[97] See *Rancho Santa Margarita* v. *Vail*, 11 Cal. (2d) 501, 81 Pac. (2d) 533 (1938); *Clark* v. *Allaman*, 71 Kans. 206, 80 Pac. 571 (1905); *Osterman* v. *Central Nebraska Public Power & Irr. Dist.*, 131 Nebr. 356, 268 N. W. 334 (1936); *Sayles* v. *Mitchell*, 60 S. Dak. 592, 245 N. W. 390 (1932); *Matagorda Canal Co.* v. *Markham Irr. Co.*, 154 S. W. 1176 (Tex. Civ. App. 1913); *Jones* v. *Conn*, 39 Ore. 30, 64 Pac. 855, 65 Pac. 1068 (1901).

[98] See *Antioch* v. *Williams Irr. Dist.*, 188 Cal. 451, 205 Pac. 688 (1922); *Emporia* v. *Soden*, 25 Kans. 588, 37 Am. Rep. 265 (1881); *Wallace* v. *Winfield*, 96 Kans. 35, 149 Pac. 693 (1915); *Sayles* v. *Mitchell*, 60 S. Dak. 592, 245 N. W. 390 (1932); *Grogan* v. *Brownwood*, 214 S. W. 532 (Tex. Civ. App. 1919).

Rights Conveyed by the Konohiki

The owner of an ahupuaa who conveyed portions of it to others was still konohiki. No one of several grantees of lands of substantial area, but which were still minor fractions of an ahupuaa, could be lord paramount over the river that flowed through it.[99]

Conveyance of Water Rights

The surplus waters of an ahupuaa, as heretofore stated, were not appurtenant to any particular portion of the ahupuaa but were the property of the konohiki to do with as he pleased. Hence water that "is properly termed ahupuaa, konohiki or surplus water and was never appurtenant to any particular part of the land and is thus distinguished from prescriptive or riparian water rights" may be separated from the lands of the ahupuaa by its owners and conveyed to others for use outside the ahupuaa.[1] So long as the holders of established rights are safeguarded, disposal of these surplus waters might be made at the will of the konohiki, irrespective of the rights of others within the ahupuaa "in the prescriptive or riparian waters." In the case from which the foregoing quotations are taken, the conveyance of surplus waters was made by lease executed by the members of a hui who as tenants in common owned the ahupuaa. The validity of the lease or of the transfer of water under it was not in issue, but on the record the right to make a conveyance of this character and to transfer the water was inferentially recognized. Incidentally, one of the members of the hui had conveyed by deed all the rights which he held in such waters. Both conveyances were made to a company which thereupon took the waters through a tunnel to an entirely different watershed.

The right to transfer the place of use of water,[2] even from one ahupuaa to another,[3] has long been recognized. This is discussed more fully hereinafter (see p. 136).

Conveyance of Land Having Water Privileges

The over-all rights of the konohiki in the resources of his ahupuaa are necessarily limited, not only by the ancient appurtenant rights of kuleanas and by prescriptive rights acquired against him, but by the terms of his own grants of lands and water privileges. A deed to a portion of the ahupuaa executed by him may or may not have said anything about appurtenances. Regardless of this, grants of lands by the konohiki included the artificial watercourses upon them, and all the water that had been enjoyed thereon from time immemorial; such right being included in the conveyance as an appurtenance, even without express mention of the easement or appurtenances.[4]

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[99] *Peck* v. *Bailey*, 8 Haw. 658, 662-663 (1867).

[1] *Foster* v. *Waiahole Water Co.*, 25 Haw. 726, 734-735 (1921).

[2] *Peck* v. *Bailey*, 8 Haw. 658, 666 (1867); *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 665 (1895).

[3] *Horner* v. *Kumuliilii*, 10 Haw. 174, 180 (1895); *Wong Leong* v. *Irwin*, 10 Haw. 265, 270-272 (1896). In the latter case the court stated, at p. 272: "There is no difference in principle between a transfer from one place to another in the same ahupuaa and a transfer from one ahupuaa to another."

[4] *Peck* v. *Bailey*, 8 Haw. 658, 661 (1867); *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 57-58 (1917).

Conveyance of Kula Land

A grant or lease of land by the konohiki, without express mention of water rights, included water privileges only if the easement already existed. Hence, as against the konohiki, a grant of kula land within an ahupuaa to which auwais had not been constructed did not carry an *implied* grant of water privileges; and if in the conveyance of land, which had no preexisting water easement, no additional grant of water privileges was made, such land could take nothing by having been a portion of an ahupuaa.[5] Hence a grantee of kula land acquires under his deed no part of the surplus water of an ahupuaa, and cannot restrain the diversion of surplus waters by the konohiki to his own kula lands.[6]

Statutory Rights of Occupants of Land Within Privately-owned Ahupuaas

An act of the legislature passed August 6, 1850,[7] granting fee-simple titles to native tenants for their cultivated lands and house lots and protecting them in the enjoyment of certain rights, contained a section which with slight modifications is still on the statute books, as follows:[8]

> Where the landlords, have obtained, or may hereafter obtain, allodial titles to their lands, the people on each of their lands shall not be deprived of the right to take firewood, house-timber, aho cord, thatch, or ki leaf, from the land on which they live, for their own private use, but they shall not have a right to take such articles to sell for profit. The people shall also have a right to drinking water, and running water, and the right of way. The springs of water, running water, and roads shall be free to all, on all lands granted in fee simple; *provided,* that this shall not be applicable to wells and watercourses, which individuals have made for their own use.

The references to the use of water in this section have been considered by the supreme court in several cases.

In a commissioner proceeding, in which the supreme court held on appeal from an order sustaining a demurrer that the petition stated the existence of a controversy sufficiently to justify the maintenance of the suit, one of the grounds of demurrer was that the lease of an ahupuaa did not pass title to the surplus water because such water belonged under this statute to each and all of the kuleana holders and other occupants of land within the ahupuaa, to the extent at least that each one could make use of it.[9] The supreme court stated that, so far as it was aware, this contention, and one based upon the failure of a royal patent of the ahupuaa to convey the water as an appurtenance (see p. 73, above), were now advanced for the first time in the history of the Islands; that they would seem, at first thought at least, to be contrary to previous decisions.[10] "Consideration of these contentions should not be undertaken unnecessarily." The matter was

[5] *Peck* v. *Bailey,* 8 Haw. 658, 661 (1867).

[6] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 15 Haw. 675, 682-683, 690 (1904).

[7] Laws Haw. 1850, p. 202 (Rev. Laws Haw. 1925, Vol. II, p. 2141). This enactment confirmed resolutions that had been passed by the king in privy council December 21, 1849 and inserted other provisions. See discussion in the chapter on the Hawaiian system of land titles, p. 30 herein.

[8] Rev. Laws Haw. 1945, sec. 12901. This was sec. 7 of the original act passed in 1850 (Laws Haw. 1850, pp. 202, 203, s. 7 (Rev. Laws Haw. 1925, Vol. II, pp. 2141, 2142)).

[9] *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.,* 20 Haw. 658, 666-668 (1911).

[10] Referring specifically to *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 15 Haw. 675, 680 (1904), "and perhaps, directly or indirectly, to other Hawaiian decisions."

thus left for consideration in connection with issues to be raised at the trial, if it should become necessary then to consider it. The supreme court had no further occasion to consider this question in this case.[11]

The statute was invoked by the commissioner in *Carter* v. *Territory of Hawaii,*[12] in awarding to certain parties water from the stream for domestic and household use. The supreme court affirmed the ruling as to the right of these parties to water for domestic use, but not upon the statutory ground. It was stated, with reference to the water rights accorded by the statute (at p. 67):

> Those rights, as we understand it, are rights in gross which may be exercised by the lawful occupants of *kuleanas* or separated portions of an *ahupuaa* against the *ahupuaa* itself after it has passed into private ownership. Each owner would have the right to obtain water at the stream for his domestic use if his land is without an appurtenant right. A squatter upon an *ahupuaa* the title to which is in the government would have no legal rights under the statute, and a grantee of a portion of a government *ahupuaa,* such as a homesteader at Waimea, would have only such implied rights as, upon general principles, would pass as appurtenant to his land under the grant thereof. * * *

These homesteaders, however, were not parties to the proceeding and it had not been suggested that their lots had appurtenant water rights. The rights of the parties to water for domestic use had not been claimed under the statute, although so awarded by the commissioner; such rights were actually adjudicated in this case as appurtenant rights (at p. 67) "in accordance with ancient custom" (at p. 71). It was held, furthermore, that the diversion of water by the Territory for sale to the homesteaders was a new use which could not be exercised to the detriment of the preexisting vested rights of others (at p. 67).

The statute itself was not cited in *Territory of Hawaii* v. *Gay,*[13] but the right to water for domestic purposes was considered and it was held that the "ancient appurtenant right" as used in Hawaiian water law included the right to water for drinking and for other domestic purposes.

It thus appears (1) that the rights to the use of water that are accorded by the statute in question are rights to water for domestic purposes; (2) that they are rights in gross, which accrue to the lawful occupants of land within an ahupuaa as against the ahupuaa itself after it has passed to private ownership; and (3) that these rights are thus distinguished from the appurtenant rights incident to particular lands, which appurtenant rights themselves include the right to water for domestic purposes, and which attach to the waters of a stream regardless of its confinement within a single ahupuaa or its extent across two or more ahupuaas.

The view that these rights in gross, under the statute, are rights as between the occupants and the konohiki who has taken title to the ahupuaa seems to result logically not only from the wording of the statute but from

[11] The case came up again on appeal from the commissioner's determination, the appeal, however, being withdrawn. The only matters decided in connection with this appeal related to a motion to strike papers from the files (*Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.,* 21 Haw. 173 (1912)) and taxation of costs of appeals from the order sustaining the demurrers (*Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.,* 21 Haw. 280 (1912)).

[12] 24 Haw. 47, 52-53, 66-67 (1917).

[13] 31 Haw. 376, 395-396 (1930).

its history. The statute was enacted for the purpose of protecting hoaainas (native tenants) "as against the sweeping operation of the konohiki's allodial titles."[14]

The last provision of the statute, to the effect that springs and running water on all lands granted in fee simple shall be free to all (with the exception of wells and watercourses made by individuals for their own use), does not appear to have had separate consideration by the supreme court. So far as the decisions go, the rights accorded by the statute are those of individuals under certain conditions, and apparently are not rights of the public generally.

Ancient Appurtenant Rights

Prior to the Mahele, the konohiki of an ahupuaa or ili kupono controlled all water privileges as well as land privileges during his tenure and made allotments thereof to his sub-chiefs, and they in turn made allotments to those inferior in rank and so on down to the hoaainas (native tenants) lowest in degree. Any tenant could be dispossessed at the pleasure of his landlord, for he was simply a tenant at will (see p. 21), and necessarily could be deprived of the use of water as well as of other privileges. However, the rule apparently came to be for the king to dispossess tenants of their lands only for cause, or of the use of water which the lands had customarily received,[15] and this rule eventually applied to the inferior landlords as well. In any event, regardless of the personnel of the cultivators or of the petty landlords, the general custom was to authorize the continued delivery of water to wet kalo (taro) lands for the service of which distribution systems had been built, for the continued cultivation of lands having irrigation facilities was in the interest of the immediate landlord and his superiors as well as that of the tenant. Hence, so long as the water supply continued dependable, the lands productive, and tenants available, the continued service of water to the general area and thence to the subunits of kalo patches would be in the ordinary case the natural custom to follow.

It was the practice in some cases to lay out the kalo patches in terraces, into the highest of which the water was turned from the auwai (ditch), the overflow from each terrace flooding the adjoining patch below and so on down successively to those lying at the lowest levels. Hence, under such system of distribution, the tracts of several hoaainas were largely interdependent in their use of the water. In other cases the several patches were supplied directly out of the auwais. In either case, the method of distribution of water was such as to perpetuate the use of water on a given tract.

The use of water as a practical matter, therefore, was originally attached by custom to the tract of land irrigated, although it might be severed from the land by the konohiki. That attachment which originated in custom eventually ripened into a legal appurtenance, or easement, or incident to the land. That is to say, the ancient use of water, where continued down to the period of land reform and existing at the time of the confirmation

[14] *Oni* v. *Meek*, 2 Haw. 87, 93 (1858). On p. 96 the court expressed its understanding that the term "people," as used in the section under consideration (sec. 7 of the original act), was synonymous with the term "tenants" as used in the law relating to private fisheries, referring back to *Haalelea* v. *Montgomery*, 2 Haw. 62 (1858).

[15] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 680 (1904).

of land titles in tenants, became the basis of a valid water right. Likewise the use of water on a tract at the time title was acquired, even though not literally an ancient use, became the basis of an equally valid right. These are all included in the term "ancient appurtenant rights."

Lands Having Ancient Rights

The supreme court has held consistently that lands which from time immemorial have enjoyed the use of water are entitled to that use as a matter of right.[16] Apparently this has never been a moot question. On the contrary, it is a fundamental principle of Hawaiian water law.

These ancient rights apply in many cases to "kuleanas"—or homesteads of the common people—a term that now is used to designate the small tracts of cultivated lands awarded to native tenants.[17] However, the right of any portion of an ahupuaa that, by ancient use, was irrigated land, would be on an equality with that of irrigated kuleana land.[18] Furthermore, as stated in the decision last cited, the ancient rights of kuleanas in government ahupuaas are similar to those in privately-owned ahupuaas. Although in the case of a privately-owned ahupuaa the water right of the kuleana holder might be subsequently enlarged by adverse use, the ancient right itself would be of the same character as that in a government ahupuaa, the enlargement being the subject of a prescriptive right against the owner of the ahupuaa.

The rights of kuleana holders to the use of water are paramount to the right of the konohiki to make further disposal of water privileges. He can dispose of surplus waters only. A subsequent lease is necessarily subject to the requirements of the kuleanas, and tenants at sufferance under the konohiki have no separate rights as against the kuleana holders but must look to the konohiki for their supply of water out of whatever surplus may exist.[19]

Kula Land

Ancient kula or dry land had no water right; hence water cannot be claimed for present rice irrigation on ancient kula land, solely by reason of extending the irrigated area to include ancient kula land as well as ancient

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[16] *Loo Chit Sam* v. *Wong Kim*, 5 Haw. 130, 132 (1884), 5 Haw. 200, 201 (1884); *Ing Choi* v. *Ung Sing & Co.*, 8 Haw. 498 (1892); *Peck* v. *Bailey*, 8 Haw. 658, 661 (1867); *Wailuku Sugar Co.* v. *Hale*, 11 Haw. 475, 476 (1898); *Kohala Sugar Co.* v. *Wight*, 11 Haw. 644, 651 (1899); *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 563 (1904).

[17] The use of the term in a customary reservation in conveyances of land in Hawaii was involved in *Territory of Hawaii* v. *Liliuokalani*, 14 Haw. 88, 95 (1902). The court stated that the words "koe nae ke kuleana o na kanaka," as so used in conveyances, as well as the English equivalent "reserving however the people's kuleana therein," have a well understood meaning; that they "mean the reservations of the house lots and taro patches or gardens of natives lying within the boundaries of the tract granted." In this case, the term had been used in a royal patent and award. The specific holding of the court was that the term did not apply to *public* rights in land below high and low-water marks, where used in a royal patent issued in 1866 to land on the seashore, the boundary of which in the patent ran to the sea and thence along the sea at low-water mark. (See p. 218, below.)

It would appear, then, that the reservation of the people's kuleana within the boundaries of a conveyed tract meant a reservation of their rights as against the owner of the tract so conveyed, and that it included the rights in gross accorded by the statute of 1850 (Laws Haw. 1850, pp. 202, 203, s. 7 (Rev. Laws Haw. 1925, Vol. II, pp. 2141, 2142); Rev. Laws Haw. 1945, sec. 12901).

[18] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 58 (1917).

[19] *Maikai* v. *A. Hastings & Co.*, 5 Haw. 133 (1884).

taro land.[20] But, in the case just cited, ancient taro land that had been left dry as the result of the diminution in population of the Islands which once subsisted on taro, and which land thereafter had been used as pasture and to a great extent had lost its characteristics as taro land, was not classed with ancient kula land. Such land, now cultivated in rice, had claimed all the water to which it was once entitled for the irrigation of taro; and where the evidence as to whether the irrigated land had been extended to include ancient kula land was conflicting and uncertain, the court refused to modify or set aside the decision of the commissioners adjudicating the water rights of the ancient taro land.

Water to the use of which one is entitled in connection with certain land cannot be transferred to kula land if others having water rights in the same source of supply are manifestly injured by the change.[21] But if no injury is done to others, one may transfer to kula land the same quantity of water to which he is entitled by reason of immemorial usage on kalo land.[22]

Water Titles

That titles to these ancient water rights, like titles to the lands themselves, belonged equitably to the occupants of the irrigated lands appears to have been a matter of tacit recognition prior to and during the period of land reform. Procedure was established, as a result of that reform, for the vesting in private individuals of legal titles to the lands; but no separate procedure was set up for the perfecting of water titles until the legislature in 1860 provided for the hearing and determination, by commissioners, of controversies respecting rights in water (see p. 50). The land commission determined the claimant's title to land, but in few if any cases does it appear that the commission specifically determined water rights. Water privileges were apparently assumed by the commission and by all interested parties to be appurtenances; and the supreme court decisions have treated these water rights as easements appurtenant which passed without express mention upon the acquisition of legal titles to the lands, as they were undoubtedly intended to pass.[23] Such rights passed by implication in public grants as well as in awards of the land commission.[24]

Water titles have been adjudicated to individuals as the result of determinations by the commissioners of water rights (or circuit judges sitting as commissioners) and by the courts (see p. 49). Titles to the use of water appurtenant by ancient custom were adjudicated to the owners of the land, unless of course the rights had been divested by grant or conveyed by lease or lost by adverse use.[25] In any event, the awards and

[20] See *Loo Chit Sam* v. *Wong Kim*, 5 Haw. 200, 201 (1884).

[21] *Kahookiekie* v. *Keanini*, 8 Haw. 310, 312 (1891).

[22] *Peck* v. *Bailey*, 8 Haw. 658, 666 (1867); *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 665 (1895); *Wong Leong* v. *Irwin*, 10 Haw. 265, 269 (1896).

[23] *Peck* v. *Bailey*, 8 Haw. 658, 661 (1867); *Carter v. Territory of Hawaii*, 24 Haw. 47, 58 (1917). See *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 383 (1930). Also see *Jones* v. *Meek*, 2 Haw. 9, 12 (1857) and *Bishop* v. *Mahiko*, 35 Haw. 608, 656 (1940).

[24] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 64 (1917).

[25] Tenants at sufferance under the konohiki must look to him for their supply of water, the adjudicated rights being those of holders of kuleanas awarded by the land commission: *Maikai* v. *A. Hastings & Co.*, 5 Haw. 133 (1884).

records of the land commission in connection with claims of title to tracts of land have been important in determining the question of water titles incident to those tracts. As stated in a decision of the supreme court:[26]

> Whenever it has appeared that a kuleana or perhaps other piece of land was, immediately prior to the grant of an award by the land commission, enjoying the use of water for the cultivation of taro or for garden purposes or for domestic purposes, that land has been held to have had appurtenant to it the right to use the quantity of water which it had been customarily using at the time named. In some instances a mere reference to the land in the award or in the records of the land commission as "taro land" ("aina kalo" or "loi kalo") or as "cultivated land" ("aina mahi") has sufficed to lead to and to support an adjudication that that land was entitled to use water for agricultural purposes. Sometimes the testimony of witnesses who appeared before the land commission in the hearings leading up to the award that the land was taro land or cultivated land, or other statements substantially to that effect, have sufficed to support a similar adjudication. * * *

The description of a kuleana in an award as kalo or loi land, then, would be evidence that the land was entitled by ancient custom to water for irrigation, "and the lack of such description would probably be evidence to the contrary, though not conclusive."[27]

The land commission's awards and records, while important in the cases in which they have been introduced in evidence, have not been by any means the sole basis of determination. In the first place, they were not always introduced in evidence.[28] Again, as stated, the land commission was concerned only incidentally with water privileges, and direct grants as well as awards carried appurtenances. Conveyances of crown land by warranty deed have been held to pass the ancient rights shown to be appurtenant to the land.[29] Kamaaina or "old-timer" testimony has usually been accorded great weight in the adjudications;[30] but important as this testimony is in determining questions of this character, it has necessarily been conflicting and uncertain in some cases, as, for example, where changes in the use of land made the identification of the boundaries of ancient taro land most difficult.[31] The position of the premises, where lower land must naturally receive the overflow from irrigation of adjoining higher land and where it is shown that the occupants of the lower land have actually been making use of the overflow in the cultivation of taro, has supported adjudications of ancient rights in such lower tracts.[32]

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[26] *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 383 (1930).

[27] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 58-59 (1917).

[28] In *Wailuku Sugar Co.* v. *Widemann*, 6 Haw. 185, 186 (1876), it was contended that the land commission award had described the land in controversy as kula land, but the award was not in evidence; and the testimony showed that the land had been anciently watered but not during a period of more than 20 years prior to its purchase by plaintiff. Other questions were involved, and on the whole it was held that sufficient testimony was not available to determine the rights of either party. (See pp. 85 and 86, above.)

[29] *Peck* v. *Bailey*, 8 Haw. 658, 661 (1867).

[30] See *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 564 (1904); *Loo Chit Sam* v. *Wong Kim*, 5 Haw. 200 (1884). See p. 54, above.

[31] *Loo Chit Sam* v. *Wong Kim*, 5 Haw. 200, 201 (1884). In *Kohala Sugar Co.* v. *Wight*, 11 Haw. 644, 646, 651 (1899), which involved a claim of title by adverse use, the kamaaina testimony, generally from aged persons, was voluminous and in many cases unsatisfactory as to details and badly shaken by cross-examination.

[32] *Ing Choi* v. *Ung Sing & Co.*, 8 Haw. 498 (1892); *Wailuku Sugar Co.* v. *Hale*, 11 Haw. 475, 476 (1898).

Quantity of Water

The quantity of water to which the ancient right attaches is that quantity that was customarily used, and necessary for the use that was being enjoyed, at and immediately prior to the time the legal right accrued—that is, the time when the land in connection with which the use was being made first became the subject of private ownership.[33] Predicating the right upon the quantity used at the time of the awards or grants is more clearly emphasized in the recent supreme court decisions than in the earlier ones. The reported decisions in early cases seem to have been based more generally upon long-continued use, or use from time immemorial—uses that necessarily antedated the land commission awards.[34] It was necessary in the *Carter* case to be more specific than this, inasmuch as the quantity of water claimed because of use on a sugar plantation, which had ceased to exist a few years before the date of the grant, was greater than the court believed was being used for irrigation purposes at the time of the grant (at pp. 66 and 68). The right to the use of this larger quantity, "which was at one time used in what seems to have been no more than an experiment in the attempt to grow cane on a commercial scale" (at p. 66), did not pass with the grant; all that passed was the right of use "of such quantity as was being used at and immediately before the date of the grant."

Although the general principle as to quantity of water has been long established, and has been made to relate more specifically to the time of the award or grant, comparatively few cases in the supreme court have involved adjudications of water in terms of measured units of flow or quantity of water. Precise methods of measurement were not available in the early days. Adjudications, therefore, generally were based upon divisions of the entire flow of the stream into stated fractions, such as one-half or one-third to each contestant; or upon the entire flow of the stream at the customary point of diversion and with the customary means of diversion; or upon the usual overflow from a certain structure or from certain lands; or upon rotation of the entire flow or of a stated fraction of the flow among various lands for a given number of days or hours of the day at a time. Established rotation systems may not be altered to the injury of the holders of rights based upon them, nor may methods of diversion be altered if the effect of the alteration is to deprive others of their customary use of water. Increased demands upon available water supplies, and claims of rights by adverse use, have made the need for precise determinations more imperative. A quantitative determination may be made where there is a reasonably definite basis for an adjudication, even though the evidence is not wholly satisfactory (see p. 54), but not where it is impossible for the claimant to make a showing with any reasonable degree of certainty (see p. 60). However, if the fact of customary use is shown by satisfactory evidence, the right is not denied merely because the quantity was not measured and

[33] See *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 64, 66, 71 (1917); *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 383 (1930).

[34] For the application of the principle in early cases, see *Peck* v. *Bailey*, 8 Haw. 658, 662, 671, 673 (1867); *Wilfong* v. *Bailey*, 3 Haw. 479, 480 (1873); *Mele* v. *Ahuna (Nakeu* v. *Ahuna)*, 6 Haw. 346, 349 (1882); *Wong Kim* v. *Kioula*, 4 Haw. 504 (1882); *Liliuokalani* v. *Pang Sam*, 5 Haw. 13 (1883); *Loo Chit Sam* v. *Wong Kim*, 5 Haw. 130 (1884), 5 Haw. 200 (1884); *Maikai* v. *A. Hastings & Co.*, 5 Haw. 133 (1884); *Davis* v. *Afong*, 5 Haw. 216, 224 (1884).

cannot be proven; the determination of quantity must be left to a future proceeding in which a finding can be based upon more than mere conjecture. These and other related matters have been discussed more fully above in this chapter in connection with the establishment of water rights and settlement of controversies(see p. 60 and following).

Kalo or taro culture was common at the time of the land reform; apparently the principal use of water for agriculture at that time was on kalo lands. Hence the quantity of water required for kalo has been the basis of probably most of the ancient rights for agricultural purposes. This runs throughout the decisions. The quantity of water used on land on which kalo was being cultivated at the time of the inception of the right, whatever that quantity was in a given case, is the current measure of the ancient appurtenant right of that land, regardless of the present use of the water for other crops, such as rice or sugar cane, and regardless of whether this ancient right is being exercised in the cultivation of the land in connection with which it was originally acquired or has been transferred to new land.[35] The ancient right of taro lands to the use of storm or freshet waters for the purpose of flushing out the patches was recognized in one of the decisions.[36]

Uses of Water

The use of water to which ancient appurtenant rights attach has been adjudicated in most of the cases as a use for irrigation purposes, which originally, as stated, was primarily the irrigation of "wet" taro land. The change of use from taro to other crops prior to the adjudication did not affect the right of use of the water (see p. 139), nor, as above stated, did it affect the quantity of water involved in the right.

The use of water for the irrigation of crops other than taro at the time of acquiring private title to land would be the basis of an equally valid right to the use of whatever quantity was involved. In *Carter* v. *Territory of Hawaii*[37] a right was claimed for irrigation based upon use by a sugar plantation which, however, had ceased to exist before the land was granted. Just what crops were being irrigated at the time of the grant does not appear, but apparently the crops did not include either cane growing on a commercial scale or taro. In any event, although the right based upon irrigation was upheld, the evidence was not deemed sufficient for an adjudication of quantity of water (at pp. 68-69).

The ancient appurtenant right includes also the right to water for household and other domestic purposes. This was probably implicit in the early cases, and has been recognized explicitly in several decisions.[38] In the *Carter* case[39] certain lands were held "entitled, in accordance with ancient

[35] See *Davis* v. *Afong*, 5 Haw. 216 224 (1884); *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 665 (1895); *Wong Leong* v. *Irwin*, 10 Haw. 265, 267-269 (1896); *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 560-563 (1904).

[36] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 690-691 (1904).

[37] 24 Haw. 47, 62-66 (1917).

[38] *Kaalaea Mill Co.* v. *Steward*, 4 Haw. 415 (1881); *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 664 (1895).

[39] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 70-71 (1917).

custom, to water from the stream for domestic use," this use having the first claim upon the flow. The principle has been expounded more recently as follows:[40]

> Water for domestic purposes on a lower ahupuaa is in any event assured under Hawaiian law. Every portion of land, large or small, ahupuaa, ili or kuleana, upon which people dwelt was, under the ancient Hawaiian system whose retention should, in my opinion, continue unqualifiedly, entitled to drinking water for its human occupants and for their animals and was entitled to water for other domestic purposes. At no time in Hawaii's judicial history has this been denied. Whenever it is proven that people dwelt, at the time of the award of the land commission, upon a piece of land awarded, it will be easily found and adjudicated that that piece of land was and is entitled to water for all domestic purposes. Under similar circumstances lands of the king or of any other konohiki which have remained unawarded would be similarly treated. These rights to water for drinking purposes and for other domestic uses are included in the ancient appurtenant rights hereinabove referred to. As already stated, the surplus water, whether normal or freshet, which is the subject of controversy and adjudication in the case at bar does not include, but by exclusion provides for, ancient appurtenant rights, which latter include rights to water for domestic purposes.

Equality of Ancient Rights

Ancient appurtenant rights, while having preference over new rights, are apparently on a basis of equality with respect to each other. That is, the actual time of beginning use of water does not seem to be a factor, provided the use was being made at the time at which title to the land passed to private parties; nor does the date of the award or patent appear to be a factor. Furthermore, while water for domestic use was accorded priority over that for irrigation in the *Carter* case, as noted elsewhere in this report (see p. 91 and footnote 39 above, and particularly p. 128, below), this was not predicated upon the time of beginning use; the natural use of water for domestic purposes was held superior to uses for artificial purposes.

Ancient rights that have been accustomed to divert proportional parts of the usual stream flow are on an equality when the supply becomes insufficient to satisfy their usual requirements; all must be reduced proportionately.[41] In time of water shortage some upstream diversions, however, may benefit from their location, and other rights are predicated upon the flow to be diverted at given points by means of certain structures, as discussed more fully below (see p. 126).

Use of the Term "Prescriptive" as Connoting Ancient Appurtenant Rights

There is, of course, a clear legal distinction between a prescriptive right, or right to the use of water acquired adversely, and a right that is claimed to be based upon a use that was permissive in its inception and that continued to be permissive thereafter. The latter has none of the elements of hostility, but must stand upon some form of voluntary grant or conveyance if it is a legal right. The ancient uses of water in Hawaii by taro (kalo) cultivators were not hostile to the konohiki, by any means; they were made with his permission, with water distributed through systems that he controlled. The ripening into legal rights, of the enjoyment of such privileges, evolved from

[40] *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 395-396 (1930).

[41] *Peck* v. *Bailey*, 8 Haw. 658, 672-673 (1867); cited with approval in *See Yick Wai Co.* v. *Ah Soong*, 13 Haw. 378, 383 (1901), and in *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 60-61 (1917).

the policy of vesting in native tenants the "rights" that equitably were theirs by ancient custom. These rights, while eventually recognized and established as against the konohiki, were none the less related to and based upon uses that had been essentially permissive.

However, in some of the earlier decisions the term "prescriptive" implies ancient appurtenant rights as well as those acquired by uses strictly adverse. This term was used repeatedly in the decision in *Peck* v. *Bailey*,[42] the earliest decision in the reports that involved water rights. In the opinion in that case, most of the rights to the use of water through the auwais in litigation were referred to indiscriminately as rights vested by prescription and vested by immemorial usage; yet a claim to the use of drainage water from certain kalo lands was distinguished from the usual type of ancient rights in overflow from higher lands, and was held to be not truly prescriptive. The use of the term "prescriptive" as connoting ancient rights also appears in several other decisions;[43] but in probably most of the cases the water rights that became vested upon the acquisition of titles to land were termed "ancient" rights or rights acquired by "immemorial usage" or "custom," and "prescriptive" was used in connection with the consideration of claims of actual adverse use.

The use of the term "prescriptive" in the earlier Wailuku (Iao) cases, as applying to or including "ancient" rights, was in issue in the later decisions in this controversy; and as a result of the clarification thus required, the terminology in the later decisions of the supreme court has been more nearly exact. "Prescriptive" had been used repeatedly in the *Lonoaea* decision and in the decision on the plea in bar in the Wailuku (Iao) controversy, as shown in the preceding footnote; yet important questions dealt with the extent to which the old rights had been altered by prescription. That is, both ancient and prescriptive rights were involved, but the *Lonoaea* opinion spoke only of prescriptive rights; and the question as to whether ancient appurtenant rights as well as truly prescriptive rights had been adjudicated in that decision was the subject of a long dispute. The supreme court held, when the case was before it on the merits, that the judgment in the *Lonoaea* case was a complete adjudication as to water covered by prescriptive rights, and that:[44]

> In our opinion, *all* of the respondent's prescriptive rights were adjudicated, including in the term prescriptive as here used the rights appurtenant to taro land. The right of taro lands to water has generally, if not always, been regarded and referred to by our courts as well as by parties as a prescriptive right acquired against the konohiki in the manner in which such rights can be acquired. In the decision on the plea in bar the term was so used.

However, a rehearing was asked on the principal ground that the court had failed to follow the earlier Wailuku (Iao) decisions; one of the arguments

[42] 8 Haw. 658, 661, 665, 666, 671, 672 (1867).

[43] See *Wong Kim* v. *Kioula*, 4 Haw. 504 (1882); *Kahookiekie* v. *Keanini*, 8 Haw. 310, 311 (1891); *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 664, 665 (1895); *Horner* v. *Kumuliili*, 10 Haw. 174, 180 (1895); *Wong Leong* v. *Irwin*, 10 Haw. 265, 272 (1896); *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 14 Haw. 50, 58, 61, 63, 66, 67 (1902), on the plea in bar. The term was also used in *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 680 (1904), in the decision on the merits, but as shown in the following paragraph, the court then pointed out, at p. 683, that the term prescriptive as there used included the rights appurtenant to taro land. It is possible that the same use of "prescriptive" was intended in *Appeal of A. S. Cleghorn*, 3 Haw. 216, 218 (1870), and *Wilfong* v. *Bailey*, 3 Haw. 479, 480 (1873), in referring to water rights obtained by grant or by prescription.

[44] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 683 (1904).

being that prescriptive rights are those acquired by adverse use, while the ancient rights were appurtenant to their respective lands as soon as the latter were awarded by the land commission, although they had been permissive and not adverse theretofore.[45] In denying the motion for rehearing, the court went into considerable detail in showing, in connection with this point, that ancient appurtenant rights had been included in prescriptive rights in these decisions, regardless of the technical inaccuracy in the use of terms. As to the growth of this usage, the court pointed out that the ancient rights had often been treated as if they were prescriptive; that in 1867, when *Peck* v. *Bailey* was decided, the ancient rights had not to the same extent as later lost their identity, or become so generally merged in or confused with prescriptive rights; and that (at p. 117):

> Such application of the word "prescriptive" may have been due in part to the fact that there is little or no difference between these two classes of rights for practical purposes, that it is often impossible at this late date to say from the evidence where one class ends or the other begins, that they are both appurtenant rights by reason of their use in connection with the land, and that although the user is adverse in the one case and was originally permissive in the other, yet in the latter it was treated as if it had been adverse or as if a title had been acquired to the water rights as well as to the land for the purpose of a Land Commission Award. The occupation of the land itself was permissive in the same way prior to the awards and yet had already come to be regarded as more or less a right, subject to forfeiture only for cause.

In subsequent cases—at least those in which actual adjudications were involved—the distinction between ancient appurtenant and prescriptive rights has been observed. The matter was thus referred to in *Territory of Hawaii* v. *Gay*:[46]

> In litigation in these islands concerning water the term "prescriptive rights" has been often used, and correctly, to denote those rights which, although not owned by certain lands originally, were acquired, without conveyance, by the actual, open, notorious, continuous and hostile use of those waters for the statutory period of limitations. The same term has, however, sometimes been used to denote or to include rights not shown to have been acquired adversely or by prescription but which were being enjoyed by and were regarded as appurtenant to certain lands at the date when those lands first passed into private ownership by the generosity of the king and with the administrative assistance of the land commission. * * *

Where it appeared that lands had been enjoying the use of water immediately prior to the grant or award of the land, such tracts had been held to have appurtenant to them the right to the use of the quantities they were then customarily enjoying. These were not truly prescriptive rights, for (at pp. 383-384):

> In these latter instances the adjudication that the lands had water rights was not dependent upon any use with continuity or hostility for any particular period of time but merely followed from the fact that just prior to the grant of the awards water was being used on those lands, presumably by right. These are the rights which in this opinion are called "appurtenant" as distinguished from "prescriptive." * * *

In the syllabus by the court, the designation of such rights is "ancient appurtenant rights."

[45] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 16 Haw. 113, 115-116 (1904).
[46] 31 Haw. 376, 383-384 (1930).

Prescriptive Rights

Prescriptive rights differ basically from ancient appurtenant rights, although in earlier cases the term prescriptive was sometimes loosely applied to the latter class, as shown immediately above. That rights to the use of water may be acquired by prescription, or adverse use against the rightful holder for the period prescribed by the statute of limitations, has been recognized in many Hawaiian decisions, as well as on the mainland.[47]

> The statute of limitations as to land was not passed until 1870, although the principle of adverse possession running against land had been recognized by this court prior to that time. * * *[48]

The period provided by the original statute of limitations was 20 years;[49] in 1898 the period was changed to 10 years.[50]

The principles that govern the acquisition of titles to land by adverse possession and use have been applied to water rights, to the extent to which they are applicable. A water right is an easement in land, and title to an easement is a title to real estate within the meaning of the statute that provides that district courts shall not have cognizance of real actions, nor actions in which the title to real estate shall come in question; such actions must be brought in the first instance in the circuit courts (see pp. 49 and 122, herein).[51] It is not deemed necessary to consider here the various ramifications of the law of adverse possession, which is an important field of law in itself. The discussion will be confined, so far as practicable, to the application of the principles in cases that have involved water rights. In such cases the actual use of water for the statutory prescriptive period by the claimant of adverse title is the foundation of the right. The adverse use for irrigation purposes is necessarily made in connection with land, and the prescriptive right becomes appurtenant to that land to the same extent as the ancient right.[52] The title to the right thus acquired is as perfect as a title acquired by deed.[53]

Elements of Prescription

In order to establish a prescriptive title to a water right, there must have been an "actual, open, notorious, continuous and hostile use" of the water for the statutory period of limitations.[54] The use must also have been made under a claim of right.[55] The element of exclusive possession—a general

[47] "We deem it to be well settled law in this Kingdom that the right to use water for irrigation purposes can be acquired by adverse and continuous use for twenty years." *Heeia Agricultural Co.* v. *Henry*, 8 Haw. 447, 448 (1892).

[48] *Galt* v. *Waianuhea*, 16 Haw. 652, 656 (1905).

[49] Laws Haw. 1870, ch. 22, sec. 1.

[50] Laws Haw. 1898, Act 19, sec. 1. The present statute of limitation of real actions is contained in Rev. Laws Haw. 1945, secs. 10439-10446; the 10-year period is prescribed in sec. 10439.

[51] *Kaneohe Ranch Co.* v. *Ah On*, 11 Haw. 275, 276 (1898); *Brown* v. *Koloa Sugar Co.*, 12 Haw. 409, 412, 415 (1900). The statute in question appears in Rev. Laws Haw. 1945, sec. 9674.

[52] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 16 Haw. 113, 117 (1904).

[53] See *Leialoha* v. *Wolter*, 21 Haw. 624, 630 (1913), and *Waianae Co.* v. *Kaiwilei*, 24 Haw. 1, 7 (1917), both of which concerned prescriptive titles to land. The same statement, however, would apply to a water-right title acquired by prescription.

[54] *Territory of Hawaii* v. *Gay*, 31 Haw. 376, 383 (1930).

[55] This point does not appear to have been involved in very many of the Hawaiian water cases, but has been referred to or implied in some of them. See, for example, *Wong Leong* v. *Irwin*, 10 Haw. 265, 271 (1896); *Kohala Sugar Co.* v. *Wight*, 11 Haw. 644, 648-650 (1899); *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.*, 20 Haw. 658, 666 (1911).

The element has been stated as being necessary in various Hawaiian cases dealing with adverse possession of land. See *Kaaihue* v. *Crabbe*, 3 Haw. 768, 774 (1877); *Kalakaua* v. *Keaweamahi*, 4 Haw. 577, 580 (1883); *George* v. *Holt*, 9 Haw. 135, 139-140 (1893); *Iona* v. *Uu*, 16 Haw. 432, 434 (1905); *Waianae Co.* v. *Kaiwilei*, 24 Haw. 1, 7 (1917); *Pebia* v. *Hamakua Mill Co.*, 30 Haw. 100, 112-114 (1927).

principle in connection with the adverse possession and occupancy of land—would be implied in the use by the adverse claimant of the quantity of water to which he claims a prescriptive right, to the exclusion of its use by others.

Actual, Open, and Notorious Use

The uses of water that have ripened into prescriptive rights have all been actual, open, and notorious. A furtive use of water could, of course, be made as a matter of fact, but could not be the basis of a prescriptive right. In one of the early cases some of the witnesses said that the water had been taken "furtively," but the main point was that the kalo patches had no regular days allotted in which to receive water but were watered as they needed irrigation.[56] The court apparently was not impressed by the "furtiveness" of the taking, for it was held that as to such kalo patches, "rights of water can be acquired for them by a sufficiently long and adverse open use of such water as may be required for the cultivation of the crop, though the water be not taken during stated periods of time."

Continuity of Use

The general principle is that use of the water shall have been continuous during the statutory period. This necessarily does not mean that the water must have been taken and used incessantly; the use is adverse if water is taken whenever required for the purpose for which the right is claimed, and this need not be done at regular periods.[57] "It is well settled that an omission to use when not needed does not disprove a continuity of use shown by using it when needed."[58] While it is true "as a general proposition" that open and adverse use of water as of right, whenever required, though not a daily or continuous use, would not interrupt the running of the statute, the fact that this was done as a matter of right, and not by acquiescence of the rightful owner in the occasional use by the adverse claimant, must be shown clearly by the weight of evidence.[59]

The continuity of use necessary to support a prescriptive title is interrupted if the rightful owner diverts the water for his own use during a fraction of the prescriptive period and thus prevents the use by the adverse claimant at a time when needed.[60] Nor can a prescriptive title be based upon usage at times when the "wet" lands had all the water they needed, the use by the adverse claimant being interrupted whenever the taking interfered with diversions for the wet lands.[61] In one of the Wailuku (Iao) Stream cases it was held that the institution of a suit to adjudicate water rights, followed by adjudication therein of certain prescriptive rights, interrupted the running of the statute of limitations as to inchoate prescriptive rights, if there were any.[62] Hence an adverse use made before the judgment could not be tacked onto any that might have accrued thereafter, so as to ripen into title; the period of prescription would have to commence anew.

[56] *Davis* v. *Afong,* 5 Haw. 216, 221 (1884).
[57] *Davis* v. *Afong,* 5 Haw. 216, 221 (1884).
[58] *Lonoaea* v. *Wailuku Sugar Co.,* 9 Haw. 651, 662 (1895).
[59] *Kohala Sugar Co.* v. *Wight,* 11 Haw. 644, 649-654 (1899).
[60] *Kohala Sugar Co.* v. *Wight,* 11 Haw. 644, 649 (1899).
[61] *Palolo Land & Improvement Co.* v. *Wong Quai,* 15 Haw. 554, 560-562 (1904).
[62] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 15 Haw. 675, 690 (1904).

Hostility

A use of water, to be adverse, must be hostile to the claim of the holder of the legal right; and a use obviously cannot be hostile if made with the latter's permission. Hence a use that was permissive at its inception and that continued to be permissive is not the basis of a prescriptive right;[63] and acquiescence in the occasional use of water by another cannot be made the basis of a prescriptive right on the part of the latter.[64] A mere permissive enjoyment for any length of time, such as the reception of waste water from kalo land under circumstances that fail to indicate an ancient appurtenant right, does not create an adverse right in an easement.[65] However, the use of a certain flow of water which was permissive in its inception may afterwards have become an adverse use, and if used adversely thereafter for the prescriptive period it would ripen into a prescriptive right.[66] The diversion of water away from kuleanas by the lessee thereof, for the purpose of supplying his other lands, has been held not adverse while the lease was in existence; the statute could not begin to run prior to the expiration of the lease.[67]

The hostility of an adverse claim to a change in the use of water is indicated by the fact that the changed use, which was open and notorious, was enforced.[68] In this case kalo lands had had the right of use of water both by day and night, but with the introduction of cane in the district and the acquisition and use on cane lands of some of the old kalo rights, a custom resulted of using the water on cane lands by day and on most of the kalo lands by night. The cane growers now claimed a prescriptive right to their day use under these rights. The commissioner in his decision held that the claim of title by prescription had not been sustained, partly because an adverse right could not be based upon mere permissive enjoyment and, as the day and night division had originated in mutual arrangement, the kalo growers were entitled to notice of the beginning of the adverse use (at p. 656). The supreme court, however, while finding "that the cane planters took the water by day with the acquiescence of the kalo planters or kuleana holders, who took it by night," also found "sufficient evidence to sustain the right to use the water by day by defendant corporation by prescription as against the majority of the plaintiffs." Apparently the principal basis of the element of hostility was that the change was enforced. If it resulted in a necessary adjustment in the use of water by those whose rights were invaded, to which the latter unwillingly submitted but without specific agreement, the finding of an adverse use was probably justified.

A use, to be hostile, must actually deprive the rightful owner of water to which he is entitled, or, as in the case just cited, compel him to change the accustomed manner of his use; in other words, the rightful owner must be injured. It follows that a use of water from a given source is not hostile if the rightful users continue to receive all the water they need, when they need it, under their established rights of use, notwithstanding the use under

[63] *Palolo Land & Improvement Co.* v. *Wong Quai,* 15 Haw. 554, 562 (1904).
[64] *Kohala Sugar Co.* v. *Wight,* 11 Haw. 644, 651 (1899).
[65] *Peck* v. *Bailey,* 8 Haw. 658, 669-670 (1867).
[66] *Liliuokalani* v. *Pang Sam,* 5 Haw. 13, 15 (1883).
[67] *Heeia Agricultural Co.* v. *Henry,* 8 Haw. 447, 448 (1892).
[68] *Lonoaea* v. *Wailuku Sugar Co.,* 9 Haw. 651, 661-662 (1895).

the adverse claim.[69] For example, a use of water made without resistance during the times when the supply was adequate for all claimants, but forcibly and successfully resisted when the water supply was short, could not be the basis of an adverse right, for no one was injured by the use which was actually made during the time of ample water supply.[70] A diversion of water which, if allowed to continue, would cause damage to the holder of a water right, would ripen into a right if continued for the period required by the statute of limitations under circumstances of hostility and otherwise so as to constitute an adverse use.[71]

Uses of water on lands vested in the same ownership are not hostile to each other, as shown below (see p. 116).

Exclusiveness

The element of exclusiveness does not appear to have had special consideration in the water-right cases that have reached the supreme court, but in other cases has been specifically recognized as essential.[72] As a matter of fact, this feature is so closely related to the elements of hostility and adverse use that it would be generally implied under circumstances sufficient to support those elements. For example, under the circumstances of the *See Yick Wai* and *Palolo* cases, above stated (citations in footnote 70), the uses of water which, the court held, had not ripened into prescriptive rights could not have been exclusive uses at any time, for they had never been made to the exclusion of the rightful claimants in time of either plentiful or scant water supply.

Quantity of Water

The quantity of water covered by a prescriptive right is that quantity of which an adverse use was actually made, and cannot extend beyond it.[73] In other words, if one makes adverse use of only a portion of the water to which an established right attaches, he can claim only that portion and not the entire right he has only partially invaded. The supreme court stated, at p. 63 in the case cited in the preceding footnote, that a prescriptive right "might cover all the water in the stream in dry times, but that would be, not because it covered all the water however much there might be, but because it covered a certain amount and there was not more than that amount in such times." In another decision[74] the court cautioned against indulgence in the view that a change of use from one tract to another could result in acquiring a prescriptive right for the new land while retaining the right on the old land on which the use had been discontinued.

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[69] Where owners of several ahupuaas claimed a prescriptive right to deviate from an established rotation system and to use water as needed on the various ahupuaas, but had taken care that kuleanas within the ahupuaas were supplied before diversions were made, the latter were not injured. See *Horner* v. *Kumuliilii*, 10 Haw. 174, 178 (1895).

[70] *See Yick Wai Co.* v. *Ah Soong*, 13 Haw. 378, 382 (1901); *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 560, 562 (1904).

[71] *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.*, 20 Haw. 658, 666 (1911).

[72] In *Bishop* v. *Kala*, 7 Haw. 590, 593 (1889), the court held that possession for the prescriptive period must be "adverse, hostile, exclusive and notorious," and set aside a verdict in favor of parties who claimed by prescription a lot used for the storing of canoes and fish nets. The claimants' predecessor had been head fisherman for the owners and had cared for their canoes and fish nets, which they stored on the lot and removed therefrom as a matter of right. Hence the use of the premises by this fisherman could not have been exclusive, nor could it have been hostile to the owner. See also *Edmonds* v. *Wery*, 27 Haw. 621 (1923).

[73] See *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 14 Haw. 50, 62 (1902).

[74] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 686 (1904).

The quantity of water required for taro was in issue in a case in which the rights had been transferred to cane lands, the evidence showing that the quantity required was greater where the taro lands were not tamped than where they were tamped.[75] The court said that it was shown that, by prescriptive right, the taro lands in question need not be tamped. Whether this was truly a prescriptive right, or an ancient appurtenant right, does not appear clearly from the reported decision, but the right with respect to tamping could doubtless be substantiated by competent testimony in either case.

Time of Use

The time of use of water under a prescriptive claim would be involved in the alteration of or complete departure from a rotation system under which water had been distributed to holders of established rights. It was said in one of the earliest water-right cases[76] that to change the system by which water was originally distributed—that is, an allotment by time—"is to change the water rights themselves." A change made adversely, then, would be an infringement upon the rights of others who depended upon the system, and it undoubtedly would ripen into a right if all of the elements of prescription were satisfied.[77]

The right to use water by day, as against others who formerly enjoyed use both by day and by night, was recognized in the Wailuku (Iao) Stream decisions as having been acquired by prescription. This point has been discussed heretofore in connection with the topic "hostility" (see p. 113). This was the exact opposite of a prescriptive right to deviate from an established rotation system—it was, in effect, the conversion by prescription of a right to a continuous flow of water into a right by rotation, that is, an alternate day and night right.

It follows that a right to a change in the time of use of water may be acquired by prescription, without disturbing in any way the actual quantity of water to which the right attaches. This fact was emphasized in the decisions in the Wailuku (Iao) cases, in which the prescriptive right related to a change in the time of use, and not to additional quantities of water out of rights held by the injured parties.[78] If the net use in a given case is the

[75] *Wong Leong* v. *Irwin,* 10 Haw. 265, 267-269 (1896).

[76] *Wilfong* v. *Bailey,* 3 Haw. 479, 480 (1873). This case did not involve a claim by prescription. The commissioner's decree was objected to, in that it imposed a new system of apportioning water by extent of land in place of the earlier allotment by time.

[77] In *Horner* v. *Kumuliilii,* 10 Haw. 174, 178 (1895), a sugar plantation claimed that it had acquired, by continuous and adverse use for the statutory period, a right by prescription to deviate from an established 11-day rotation system and to use the water as needed on its several ahupuaas. However, care had been taken to supply the kuleanas within an ahupuaa with water before taking the water away from the ahupuaa, so no one was injuriously affected by the change. The plantation, although having used the water on its lands makai without reference to the ancient rotation system, claimed that the system must be strictly enforced as to kuleanas or kalo patches mauka. The supreme court did not discuss further the claim of prescription. However, it was held that the old system must in general be preserved, with the provision that the kalo patches mauka were to be filled first, and the order of rotation among the several lands was set out in the decision.

[78] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.,* 14 Haw. 50, 62 (1902). In the final decision in this controversy, on motion for rehearing (16 Haw. 113, 118-119 (1904)), the court in an analysis of the preceding decisions for the purpose of showing that ancient appurtenant rights as well as prescriptive rights had been adjudicated, stated with reference to *Lonoaea* v. *Wailuku Sugar Co.* (9 Haw. 651 (1895)): "The decision was that the right which had been acquired previously had become changed as to the time of user—not that some of those rights had become so changed or that a new right to an additional quantity of water had been acquired. * * * The material change was in the time of user, not in the quantity of water. The decision was not that a right to a certain quantity of water during certain hours had been acquired, but that a right to a certain quantity continuously had been changed to a right to that quantity alternately. The alternate right was not a right acquired as to quantity by adverse user. * * * The old rights as to quantity remained substantially the same, and the new right consisted merely in the change of time."

same under a system of continuous flow as under a system of rotation, the right to a given quantity of water would not be affected by a change from one system to the other. It so happens that the net use of water under the continuous delivery method is often greater than the net use on the same lands under rotation; in such case, of course, one who effected by prescription a change from continuous flow to rotation could claim only the quantity that he has actually used under the new prescriptive system.[79] And if one should effect in the same way a change from rotation to continuous flow involving a greater use of water, and should actually make a greater use under the new system, the right to use the increase in supply would run adversely to those who were thereby deprived of its use, and who might or might not have been parties to the former rotation system.

Owners of Rights Affected

A prescriptive right to the use of water, out of a supply to which several rights attach, may be acquired as against some of the parties only, leaving the rights of the others unaffected. This is the usual situation that prevails on stream systems; the right runs against only those who are injured by the unauthorized diversion. Various parties in the Wailuku (Iao) controversy were excepted from the operation of the right that was established by the Wailuku Sugar Company to use water by day.[80] Certain ones had persisted in the ancient daytime use, notwithstanding the general change in practice. Others had continued to do so with the express permission of the company. There were still others—generally owners of town lots in Wailuku—against whom the company had not effectually established its easement, and so the villagers were not deprived by the decision of the right to use water for domestic purposes during the day or night.

An adverse right does not run against another tract in the same ownership. A prescriptive right was claimed in favor of the land of Halaula on the Island of Hawaii, originally owned by Kamehameha I, as against the land of Halawa which likewise was owned by him at the time the first diversion of water from Halawa to Halaula was alleged to have been made.[81] This use of Halawa water by Kamehameha on Halaula land, the court held, could not have been the inception of an adverse use in favor of Halaula as the dominant estate. Until the lands had separate owners, no adverse use of the water could have been made in favor of one land as against the other. Nor does a prescriptive right in favor of one's land run as against other lands that the adverse claimant holds under lease.[82] The use cannot be ad-

[79] Note that in the *Lonoaea case* (9 Haw. 651, 664, 666 (1895)) the court stated that the Wailuku Sugar Co. held about one-half the land in Wailuku which had appurtenant rights, and that its claim of water right was for water 12 hours each day from Monday to Saturday, inclusive, and for 6 hours on Sunday, which "would be about six-fourteenths of the entire supply, which is less than the amount to which one-half of the land which had water rights would be entitled to." In the adjudication in this case, the company was given the right to take water by day "on each day of the week, excepting Sunday." It was held in the appeal on the plea in bar (*Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 14 Haw. 50, 68 (1902)) that there had been no adjudication one way or the other as to Sunday water; and in the subsequent decisions (15 Haw. 675, 689, 696 (1904) and 16 Haw. 113, 121-122 (1904)), it was expressly held that the company had no title to the Sunday water. The net result of the change in time of use in this case, so far as quantity of water was concerned, was that the holder of the prescriptive right to make the change had less water than it would have had under the earlier system.

[80] *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 664 (1895).

[81] *Kohala Sugar Co.* v. *Wight*, 11 Haw. 644, 648 (1899).

[82] *Heeia Agricultural Co.* v. *Henry*, 8 Haw. 447, 448 (1892).

verse while the lease is in existence, and the statute would not begin to run until the lease has expired; hence the diversion of kuleana water by the lessee of the kuleanas, for the purpose of supplying lands owned by him, could not have been the inception of a prescriptive right during the term of the lease.

The general principle that the statute of limitations does not run against the government, has been recognized in Hawaii, as elsewhere.[83] There has been some contention, however, as to the applicability of the principle to crown lands. These lands were originally the property of the king, but by statute enacted in 1865[84] were rendered inalienable, and by the constitution of 1894[85] were declared to be the property of the Hawaiian government and subject to alienation. In *Harris* v. *Carter*,[86] Justice Judd stated that, while he understood there was no prescription against the state, the king as an individual could not claim this immunity; and that crown lands were subject to the statute of limitations. However, in *Galt* v. *Waianuhea*,[87] the court held, in answer to a reserved question, that lands that could not be disposed of under the statute of 1865 could not be taken away by adverse possession; that the same reasons for holding that statutes of limitation do not run against the state existed for holding that they did not run against crown lands under this statute; and therefore, that evidence tending to show adverse possession of crown land beginning with the year 1873 was not admissible.

It was contended in *Carter* v. *Territory of Hawaii*[88] that crown land waters were subject to acquisition by prescriptive rights through adverse user, and that such user was established by the evidence in favor of a tract that was stipulated to have been a part of an ahupuaa that had been crown land. The court stated:

> This last point would seem to be foreclosed by the decision in *Galt* v. *Waianuhea*, that the crown lands were not subject to adverse possession. But we think it is not necessary to enter upon a discussion of these matters. Under the view already expressed to the effect that these ancient ditches had, prior to the acquisition of private titles to the lands, become incorporated into the permanent topography of the country so as to become virtually natural watercourses, the right to water for both domestic use and irrigation, in accordance with ancient custom, passed with the conveyance of the land as an incident, like a riparian right at common law, though it was by public grant. * * *

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[83] See *Kahoomana* v. *Moehonua*, 3 Haw. 635, 640-641 (1875); *Minister of Interior* v. *Parke*, 4 Haw. 366, 369 (1881) as to rents; *Harris* v. *Carter*, 6 Haw. 195, 209 (1877); *Thurston* v. *Bishop*, 7 Haw. 421, 437-438 (1888); *W. C. Peacock & Co.* v. *Republic of Hawaii*, 11 Haw. 404 (1898) as to statute permitting suits to be brought against the government (Laws Haw. 1894-5, Acts 22 and 26); *Galt* v. *Waianuhea*, 16 Haw. 652, 657 (1905); *Kunewa* v. *Kaanaana*, 18 Haw. 252, 255 (1907) as to taxes. In *In re Title of Kioloku*, 25 Haw. 357 (1920; affirmed, *Territory of Hawaii* v. *Hutchinson Sugar Plantation Co.*, 272 Fed. 856 (C. C. A. 9th, 1921)), it was held that while the statute of limitations cannot be invoked against the state, where sufficient facts are shown the common-law presumption of a lost grant may be invoked either against the state or in favor of it.

[84] Laws Haw. 1864, p. 69 (Rev. Laws Haw. 1925, Vol. II, p. 2177).

[85] Constitution, Republic of Hawaii, 1894, art. 95.

[86] 6 Haw. 195, 209 (1877). This was a decision by a single justice, from which appeal was not taken to the full court. The decision was approved as to the point here discussed, in *Kapiolani Estate* v. *Cleghorn*, 14 Haw. 330, 333-336 (1902), which case, however, concerned strictly private lands of the king.

[87] 16 Haw. 652, 657-659 (1905); approved in *Territory of Hawaii* v. *Puahi*, 18 Haw. 649, 654 (1908). Counsel in *Galt* v. *Waianuhea* had contended that the statement of Justice Judd in *Harris* v. *Carter* concerning the applicability of the statute of limitations to crown lands was dictum. The court stated that regardless of that, its opinion did not accord with Justice Judd's statement, but pointed out that the statute of 1865 did not appear to have been called to the attention of the court in *Harris* v. *Carter*. The court in the *Puahi case* (at p. 653) definitely called Justice Judd's statement dictum.

[88] 24 Haw. 47, 63-64 (1917).

In other words, the rights recognized as incident to the detached tract of crown land[89] in this case conformed to the classification of ancient appurtenant rights, not prescriptive rights. The question as to whether a prescriptive title could be perfected to the use of crown land waters (within the period 1865 to 1894), if not to the lands themselves, was not directly answered by the court in the *Carter* case, although doubt was expressed as to whether it could be done, as above indicated. However, a title to a water right is a title to real estate and is incident to the ownership of land. Hence, on the theory of the *Galt* case that the crown lands after the passage of the statute of 1865 had the same status, so far as the effect of the statute of limitations was concerned, as government lands, there would seem to be no more reason for allowing prescriptive titles to vest with respect to the water rights than to the lands themselves.

Conditions of Easement

A prescriptive right can be acquired to the use of water from a ditch, as well as to the use by direct diversion from a stream, and in such case the holder is entitled to protection against interference with the exercise of his right to the use of the ditch. Where parties had acquired by prescription a right to water flowing from springs into kalo patches and thence into an auwai, they had an easement in the auwai which could not be cut, narrowed, or otherwise interfered with to their injury.[90] Their prescriptive right in this case extended to the overflow into the ditch after the kalo patches had become sufficiently watered; hence the holder of those lands was enjoined from draining the excess water under the auwai to other lands held by himself, and was required to restore the ditch banks to their original height.

The requirement that the conditions of the easement must be maintained applies as against the easement holder as well as in his favor. It was stated, in a case in which the plaintiff claimed a prescriptive right to divert water through a ditch located partly on defendant's land, that the law "is well settled that when one has acquired, either by express grant or by prescription, an easement in the land of another, he may not substantially alter the mode of using it without the consent, express or implied, of the owner of the servient estate."[91] Hence, in this case, the owner of the dominant estate could not make a substantial change in the direction or location of the ditch without such consent; if such substantial change were made without such consent, the right to use the new ditch would be the subject of a new adverse use. The language used by the court was approved and followed in a case (not involving prescription) in which an easement existed for the conveyance of water through a wooden box in one location and a drainage culvert in another, but in which the water was being taken through an iron pipe in a location different from either one to which the easement applied.[92] It was

[89] There was some question as to whether this particular tract was actually crown land at the time it was granted.

[90] *Davis* v. *Afong,* 5 Haw. 216, 224 (1884).

[91] *Scharsch* v. *Kilauea Sugar Co.,* 13 Haw. 232, 236 (1901).

[92] *Oahu Railway & Land Co.* v. *Armstrong,* 18 Haw. 258, 261 (1907). This case was again before the supreme court in 18 Haw. 429 (1907), concerning an offer of new evidence and the motion of a third party to intervene; and again in 18 Haw. 507 (1907) as the result of noncompliance with the decree rendered pursuant to the decision in 18 Haw. 258.

further quoted and approved in a decision to the effect that a flume might not be substituted for a ditch for which a right of way had been granted, and that even though the flume might be regarded as the lesser burden, that fact was immaterial in determining the rights of the parties.[93]

Drainage

A prescriptive right cannot be acquired by a lower landowner to the flow of mere drainage from higher lands, where the water is not flowing in known and well defined channels, or is not being received in accordance with an ancient appurtenant right.[94] The same principle has been held to apply to underground drainage.[95] (See p. 80 above.)

The necessity of draining rice land at certain periods of cultivation and the disposition of the water so drained have been involved in at least two cases. In *Davis* v. *Afong,*[96] referred to above in connection with the conditions of an easement, the kalo lands adjoining the auwai were being cultivated in rice. Plaintiffs had a prescriptive right to the overflow into the auwai—although the circumstances point to an ancient appurtenant right rather than a prescriptive right—and it was held that the necessary drainage from the rice lands must go into the auwai as had been the case with the excess water formerly used in cultivating kalo. In the other case a prescriptive right to drain the water from rice land into an adjacent river was recognized.[97] (See ch. 6, p. 206, concerning this latter case.)

Pleadings and Evidence

Procedural questions have been raised in connection with some of the claims of prescriptive rights. For example, in an appeal from a decree in an equity case overruling a demurrer, it was held that a claim of adverse possession since the date of a conveyance, and a claim also by virtue of the conveyance itself, with its apparent easements of water, were not inconsistent; that a title to water rights might be pleaded as having been acquired in diverse ways in order that the party alleging title might have the benefit of proof showing that it was acquired in any one of the ways.[98] The petition in an action brought under the statute relating to the settlement of water controversies, alleged ownership of certain waters and diversion by the principal defendant of part of such waters without right, but under a claim of right.[99] The supreme court reversed a judgment sustaining demurrers and dismissing the bill. It was stated that it sufficiently appeared from the petition that if the petitioner owned the water rights, the diversion complained of would ripen into a right by adverse use if allowed to continue; and that the time of the commencement of the unlawful diversion need not be alleged, adverse possession, if claimed by any of the parties, being matter of affirmative defense. Further:

> It is sufficient in order to justify the filing of the petition that there is a diversion at present, under claim of right, and that the right to so divert is disputed, —in other words, that a controversy exists.

[93] *Medeiros* v. *Koloa Sugar Co.,* 29 Haw. 43, 45 (1926).
[94] *Peck* v. *Bailey,* 8 Haw. 658, 669-670 (1867).
[95] *Wong Leong* v. *Irwin,* 10 Haw. 265, 270 (1896).
[96] 5 Haw. 216, 224 (1884).
[97] *Cha Fook* v. *Lau Piu,* 10 Haw. 308, 309 (1896).
[98] *McBryde Sugar Co.* v. *Koloa Sugar Co.,* 19 Haw. 106, 119-120 (1908).
[99] *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.,* 20 Haw. 658, 660, 666 (1911).

The vesting of a prescriptive right must be sustained by the weight of evidence in order to authorize the court to issue an injunction that will deprive the injured party of his right to use the water. The adverse right must be clearly proved,[1] and the burden of proof is upon the party who alleges the acquisition of a title by adverse possession.[2] A finding that a right has been acquired by prescription or otherwise is not justified where the evidence is conflicting, uncertain, and unsatisfactory.[3]

Characteristics of a Water Right

Easement Appurtenant to Land

The Water Right Is an Easement

It was stated, in each of the two earliest water-right cases that were reported, that the right to use water is an easement in favor of land, to be gained by grant or prescription.[4] This view of the property nature of a water right has been consistently maintained by the courts.

The easement for the benefit of the land to which it is appurtenant, is in the source of water supply; that is to say, the holder has an easement in the stream consisting of the right to the free and uninterrupted flow of its waters to his point of diversion, even though the bed of the stream is the property of others.[5] Likewise, in the case of ancient appurtenant rights, the holder has an easement not only in all the water that the lands have enjoyed from time immemorial, but also in the ancient auwai constructed for the purpose of serving his land;[6] or, in the case of land customarily watered with the overflow from adjacent higher terraces, an easement in the flow from the higher land.[7] Likewise, if the right to take water from a stream is separated by the owner from the title to the land by grant or reservation, the right upon such separation would become an easement in the land.[8] The easement in favor of the holder of a prescriptive right would be similar; it would exist in the source of supply, in the auwai from which the water was being diverted if that was the physical situation,[9] and in the land to which the right was formerly appurtenant.

[1] *Kohala Sugar Co.* v. *Wight,* 11 Haw. 644, 654 (1899).

[2] In *Leialoha* v. *Wolter,* 21 Haw. 624, 630 (1913), a case dealing with adverse possession of land, counsel for defendant admitted the general rule that the burden of proving adverse possession is on the party alleging it, but claimed that the rule applied only when adverse possession was claimed against one having ownership by deed; and contended that where both plaintiff and defendant claimed title by adverse possession, the burden of proving the cause of action rested with the plaintiff having the affirmative throughout the entire case. The court could find no authority in favor of this contention, and held that the fact that plaintiff's title was derived by adverse possession, and not by deed, had nothing to do with the order or burden of proof and in no way affected the validity of the title. "The title is as perfect as if it had been conveyed by deed."

Notwithstanding the general rule, where the claimant is shown to have been, for the statutory period, in actual, open, notorious, continuous, and exclusive possession, apparently as owner, and such possession is unexplained, either by showing that it was under a lease from the true owner, or under other contract with him, or otherwise by his permission, the presumption is that the possession was hostile and the burden then is upon the true owner to show that the use and occupancy were permissive. *Lalakea* v. *Hawaiian Irrigation Co.,* 36 Haw. 692, 708 (1944).

[3] *See Yick Wai Co.* v. *Ah Soong,* 13 Haw. 378, 381 (1901).

[4] *Peck* v. *Bailey,* 8 Haw. 658, 661-662 (1867); *Appeal of A. S. Cleghorn,* 3 Haw. 216, 218 (1870).

[5] See *Wailuku Sugar Co.* v. *Hawaiian Commercial & Sugar Co.,* 13 Haw. 668, 669 (1901).

[6] *Peck* v. *Bailey,* 8 Haw. 658, 661-662 (1867); *Davis* v. *Afong,* 5 Haw. 216, 224 (1884); *Carter* v. *Territory of Hawaii,* 24 Haw. 47, 58 (1917).

[7] *Ing Choi* v. *Ung Sing & Co.,* 8 Haw. 498 (1892).

[8] See comments in dissenting opinion by Chief Justice Robertson in *Tsunoda* v. *Young Sun Kow,* 23 Haw. 660, 674 (1917), a case dealing with water from an artesian well.

[9] See *Davis* v. *Afong,* 5 Haw. 216, 224 (1884). The circumstances in this case indicate that this may have been an ancient appurtenant right rather than a true prescriptive right; but the principle would be the same in either case.

The enjoyment of the easement will be protected, as a property right, against infringement (see p. 62 above). The mode of using an easement in the land of another, however, may not be substantially altered without the consent, express or implied, of the owner of the servient estate (see pp. 118 and 136); and the burden of showing such express or implied consent is on the holder of the easement.[10]

Appurtenant to Land

Both ancient and prescriptive rights are regarded as appurtenant to the lands in favor of which the rights have been acquired, by reason of their use in connection with such lands.[11] Konohiki rights—that is, rights to the use of surplus waters above the quantities necessary to satisfy ancient and prescriptive rights—are presumably appurtenant to the ahupuaa or ili kupono through which the stream flows; but they are not appurtenant to any particular part of the land.[12] It was held in a fairly early tax case that as certain water users, who held shares in a ditch company, had not treated their interest in the water as appurtenant to their land—their rights being "unlike the rights of riparian proprietors, and equally unlike the rights of irrigation appurtenant to land from ancient watercourses"—the property of the ditch company was rightly taxed as a distinct piece of property; but in a later case involving taxation of the same water, Justice Judd stated that while under the circumstances he was not at liberty to question the soundness of that opinion, he confessed "to some doubts as to whether water actually used in the irrigation of crops can properly be considered as a distinct property from the land which it benefits, and into which it sinks."[13] In any event, the general principle that a water right exercised in connection with the irrigation of land is appurtenant to that land, is undoubtedly well established.

The water right, while appurtenant to the land for the benefit of which the easement exists, is not an inseparable appurtenance. That is to say, it may be severed in ownership from the lands by a separate sale of the water right, after which it cannot be regarded, for purposes of taxation, as appurtenant to such lands;[14] or it may be separately leased;[15] or it may be separated from the lands by prescription (see pp. 111 and 140).

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[10] *Oahu Railway & Land Co.* v. *Armstrong*, 18 Haw. 258, 262 (1907).

[11] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 16 Haw. 113, 117 (1904).

[12] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 680-683 (1904); *Foster* v. *Waiahole Water Co.*, 25 Haw. 726, 734 (1921).

[13] *Haiku Sugar Co.* v. *Birch, Tax Collector*, 4 Haw. 275, 277-278 (1880); *Haiku Sugar Co.* v. *Fornander, Tax Collector*, 6 Haw. 532, 533 (1884).

[14] *In re Taxes, Waiahole Water Co.*, 21 Haw. 679, 682 (1913). Also see *Long* v. *Wai Fong*, 9 Haw. 628 (1895), and *Tsunoda* v. *Young Sun Kow*, 23 Haw. 660, 674 (1917).

[15] *Un Wo Sang Co.* v. *Alo*, 7 Haw. 739, 742 (1889); *Tsunoda* v. *Young Sun Kow*, 23 Haw. 660, 669 (1917). See *Long* v. *Wai Fong*, 9 Haw. 628, 629-630 (1895). In *Foster* v. *Waiahole Water Co.*, 25 Haw. 726, 734-735 (1921), the members of a hui, who as cotenants owned the surplus waters of an ahupuaa, leased such surplus waters for a term of 50 years to a company which diverted them through a tunnel into another watershed. As stated in the opinion, the record showed that the owners of the cotenancy had, by virtue of the lease, separated the konohiki water rights from the lands of the ahupuaa; therefore, they had created out of the common property an easemnt in gross which they had recognized and dealt with as separate and independent property. This done, the court could conceive of no sound reason why "any one of the cotenants might not transfer his interest in the easement thus created to a third party by a deed which is valid at least during the life of the easement. Of course at the expiration of the lease the easement would terminate and the water and water rights would revert to their former status. The validity of the deed as to those waters and rights would then depend upon whether it transgressed the rights of the cotenants not parties thereto."

The Water Right Is Real Property

It has been brought out heretofore that the water right has been held to be real estate within the meaning of the statute providing that the district courts shall not have cognizance of real actions, nor actions in which title to real estate shall come in question (see pp. 49 and 111). This principle is based upon the reasoning that a water right is an easement, and that:[16]

> "Real estate" includes lands, tenements and hereditaments. An easement is a hereditament, though incorporeal. It is therefore real estate; and the title to an easement is a title to real estate. Neither the reason nor the language of the statute would confine its operation to cases in which the ownership of the tangible or corporeal land itself is involved nor to cases in which the title brought in question might be the basis of an action of ejectment. Titles to easements are held to be within the meaning of similar statutes elsewhere. * * *

Conveyance of Appurtenances with Land

It is well settled that a water right that is shown to be an easement appurtenant to particular land will pass by a grant of the land, without express mention being made of the easement or the appurtenances;[17] and this includes public grants as well as awards of land by and through the land commission.[18] It has also been held, on demurrer, that if the grantees (formerly lessees) of a portion of an ahupuaa were using, at the date of the conveyance, the konohiki waters upon the granted lands without opposition from the grantor, and if the water was necessary for the use that was then being made of the granted premises, the right to such use passed with the grant as an implied easement.[19]

The supreme court on several occasions has considered claims of water rights under leases of land. A case that was before the court five times, on one point or another,[20] involved the construction of a lease of a rice plantation and of a subsequent lease of water, between the same parties. The principal contention was as to whether the water right had already passed as an appurtenance under the first lease. Chancellor Judd stated that while he thought the law well settled that the " 'grantor conveys by his deed as an appurtenance whatever he has the power to grant, which is practically annexed to the granted premises at the time of the grant and is necessary to their enjoyment in the condition of the estate at the time,' " nevertheless having found that the two leases were one transaction, and that it was the understanding and intention of the parties that the lessor should give a sepa-

[16] *Kaneohe Ranch Co.* v. *Ah On,* 11 Haw. 275, 276 (1898). See also *Brown* v. *Koloa Sugar Co.,* 12 Haw. 409, 412 (1900).

The water right in the Western States is held to be real property, whether it is an appropriative or a riparian right. See Wiel, S. C., "Water Rights in the Western States," 3d ed., vol. I, sec. 18, pp. 20-21 (San Francisco, 1911); Kinney, C. S., "A Treatise on the Law of Irrigation and Water Rights," 2d ed., vol. II, sec. 769, pp. 1328-1332 (San Francisco, 1912). However, while the appropriative right has often been called an easement, both of these authors submit that it is not subordinate to land or a servitude upon some other thing and hence is not an easement, but that it is an incorporeal hereditament. Wiel, op. cit., vol. I, sec. 287, pp. 303-304; Kinney, op. cit., vol. II, secs. 770 and 771, p. 1333. They also bring out the well-recognized principle that a riparian right to the use of water, while also an incorporeal hereditament, is not a mere easement or appurtenance to land, but is part and parcel of the land itself. Wiel, op. cit., vol. I, sec. 711, pp. 777-780 and sec. 864, p. 919; Kinney, op. cit., vol. I, sec. 453, p. 766 and sec. 454, p. 769.

[17] *Peck* v. *Bailey,* 8 Haw. 658, 661 (1867); *Carter* v. *Territory of Hawaii,* 24 Haw. 47, 58 (1917). See *Territory of Hawaii* v. *Gay,* 31 Haw. 376, 383 (1930).

[18] *Carter* v. *Territory of Hawaii,* 24 Haw. 47, 63-64 (1917).

[19] *McBryde Sugar Co.* v. *Koloa Sugar Co.,* 19 Haw. 106, 121 (1908).

[20] *Ung Wo Sang Co.* v. *Alo,* 7 Haw. 288 (1888), 7 Haw. 306 (1888); *Un Wo Sang Co.* v. *Alo,* 7 Haw. 661 (1889), 7 Haw. 673 (1889), 7 Haw. 739 (1889).

rate lease for the water right and receive separate rent therefor, the rule of law above approved did not apply.[21]

Contentions were made in the *Kaneohe* case[22] that the surplus waters were not appurtenant to an ahupuaa that had been leased and hence did not pass with the lease, and in any event had not been conveyed as an appurtenance in the patent to the lessor's predecessors. As stated heretofore (see pp. 73 and 100), the supreme court declined to pass upon these questions on the demurrer in this case and had no further occasion to consider them in this controversy.

Leases of Land with Provisions Relating Specifically to Water

Several cases have reached the supreme court in which it has been necessary to construe provisions relating to water in connection with leases of land.[23] In one instance an agreement was made to lease lands "to be used only in the cultivation of rice," the owner "to furnish all the water necessary for the cultivation of said land with rice."[24] The main controversy was as to the area on which the tenants were bound to pay rent under the agreement; and the tenants (plaintiffs) prayed that the owner be ordered to execute a lease. The court held that the land liable for rent must be land delivered and accepted that was suitable for rice culture by an ordinary expenditure of money in preparation, reasonably level in order to be laid out in patches, and capable of being put under water as required from convenient and accessible ditches or streams; that "rice land 'furnished with water' means land for which enough water for the successful growing of crops of rice is reasonably accessible, and without charge to the plaintiffs for the use of such water."

In another case a copartnership had demised certain lands to defendant's predecessor, granting the right to "take and use" all the water in certain streams, including the Koula River, outside these lands "for irrigating cane and for fluming and for mill and plantation purposes, but only for the demised premises," and to construct "such dams or other works" on copartnership lands necessary to "obtain and use such water" therefor.[25] The main object of the lease, according to the court, was no doubt the establishment of a large sugar-cane plantation and the granting of necessary facilities. Later the copartnership leased to the plaintiff all right, title, and interest in the power of the falling and running water in Koula Valley above the junction of two branches of Koula River, expressly excepting defendant's rights under the first lease. It was held, in construing this first lease, that the defendant had the right to divert the water at any point in the river and to convey it to the demised premises for any purpose stated in the lease, including generation of electricity on such premises for plantation purposes; but that it did not have the right to use the power of the stream "as the water runs and falls therein on lands other than those demised" for the purpose of generating electricity to be used on the plantation for plantation purposes.

[21] *Un Wo Sang Co.* v. *Alo,* 7 Haw. 739, 742 (1889). The full court, with one dissent, agreed with this conclusion.

[22] *Kaneohe Ranch Co.* v. *Kaneohe Rice Mill Co.,* 20 Haw. 658 (1911).

[23] In *Long* v. *Wai Fong,* 9 Haw. 628 (1895), the holder of a conveyance of a water right from a spring brought an action against others because of a diversion of the water covered by the right. It appeared that the grantor of plaintiff, prior to the grant, had leased one-half of the water in connection with the land on which the spring was situated, reciting in the lease that the other half was already leased to another party. Hence, as plaintiff was only the reversioner and there was no injury to the inheritance, she could not maintain an action for diversion of the water even against mere trespassers.

[24] *Chulan & Co.* v. *Princeville Plantation Co.,* 5 Haw. 84, 87-88 (1884).

[25] *Cross* v. *Hawaiian Sugar Co.,* 12 Haw. 415 (1900).

It was further held that plaintiff had the right to develop water power under the terms of his lease, subject to defendant's right to divert the water as aforesaid at any point even above the hydroelectric works that the plaintiff might construct.

The use of water from artesian wells has been involved also in the construction of land leases. In one of the controversies the lease excepted certain described buildings and grounds; lessees to have the sole right to "all of the water upon said premises" and to supply to lessor, free of charge, all water required for the buildings and grounds excepted.[26] When the lease was executed, the only water on the premises, demised or excepted, was that coming from an artesian well on an excepted tract, and the method of use in connection with the excepted buildings was to pump water from the well into an elevated tank, from which the water flowed by gravity to the points of use. Construing the lease, the court held, in the first decision, that the water granted was that to be found on any portion of the tract, demised or excepted. In the second decision above cited, which was rendered upon submission upon an agreed statement of facts, the court held that the lessees should furnish water for the buildings in the manner in which it was then being furnished, and not simply permit the lessor to take the water as it stood in the well. Questions of estoppel that were raised in these cases are discussed hereinafter (see p. 143).

In another controversy[27] one of the questions was whether the surplus water from an artesian well passed by a lease of the land on which the well was located. The habendum included "all rights, easements, privileges and appurtenances"; but a stipulation in the lease gave the lessee "the right to use as much water of the said artesian well on the lands hereby demised as shall be necessary for the purpose of irrigating the lands and for domestic purposes." The cause reached the supreme court upon appeal from a decree dismissing the bill of complaint after overruling a demurrer; and the bill had alleged that for three years, one-third of the water from the well had been sufficient for the irrigation of the demised land and for domestic purposes, and that the surplus of two-thirds had been used during that time on other lands and had been leased to the holder of those other lands shortly after the leasing of the lands on which the well was located.

Construing the lease in its entirety, the court held, by concurrence of 2 of the 3 justices, that the intention of the parties was to pass only the quantity so required, the surplus being available for leasing to others. The water theretofore used and required on the demised lands passed by the lease as an appurtenance, as well as by the express stipulation; and the surplus theretofore used and necessary on other lands was excepted from the operation of the lease. In a concurring opinion (at pp. 669-670), Justice Coke made it clear that in concurring in the judgment, he did not understand that the opinion went to the extent of holding "that the surplus water from an artesian well does not belong to the land on which the well is situated or that upon a conveyance of the land that all the water, in the absence of an excep-

[26] *Richards* v. *Ontai*, 19 Haw. 451, 453-454 (1909); *Richards* v. *Ontai*, 20 Haw. 335, 340-342 (1910; submission upon agreed facts). Another decision under similar title, reported in 20 Haw. 198 (1910), concerned the disposition of an arbitration award entered as judgment, the contents of which were not discussed in the opinion.

[27] *Tsunoda* v. *Young Sun Kow*, 23 Haw. 660, 661-668 (1917).

tion or reservation of a part thereof, would not pass to the grantee"; his position being based upon his conviction as to the intent and understanding of the parties. Chief Justice Robertson dissented from the view that the intent to except the surplus water was inferable from the language of the lease, "though it be read in the light of the surrounding circumstances," and from the view that the surplus water, when the lease was executed, "did not belong to or go with the land on which the well was situated" (at pp. 670-674). (See discussion of this case in connection with ground waters, p. 178, below.)

Conditions of Exercise of Right

Each individual water right may be exercised only upon certain conditions which are peculiar to it; that is, the use of water under an ancient or prescriptive right is conditioned upon the diversion of a certain quantity of water, or a certain proportion of the available supply, at a given point, either continuously or in rotation under a certain schedule (see pp. 60, 106, and 114 concerning apportionment of water). Konohiki rights carry greater privileges; such rights extend to the entire supply of surplus water, which the konohiki may do with as he pleases, the principal limitation being in cases in which two or more konohiki units are riparian to the same stream (see p. 77).

The conditions that appertain to a water right both limit the extent to which the holder may exercise it as against other holders of rights in the same source of supply, and measure the use that he may make without interference from these other holders. The water-right holder, in other words, may not alter the conditions of his right to the injury of others, but he may insist that others respect those conditions. These several rights of use in a common source of water supply are necessarily reciprocal.

No Priority Because of Location on Stream Among Holders Entitled to Proportions of Flow

Preference in time of water shortage is accorded to uses of water for domestic purposes, as noted below (see p. 128). Furthermore, in the *Carter* case the first claim upon the surplus water of a stream for reasonable use for domestic purposes, as between an upper ahupuaa and a lower ahupuaa riparian to the stream, was accorded to the upper ahupuaa, as stated heretofore (see pp. 90-91).

However, where each claimant to the use of water in a given source of supply is entitled to a certain proportion of the available flow, there is no priority of right solely because of the location of one's diversion works upstream from those of others; when the water supply is not sufficient for all, each must take a proportionate loss.[28] This general principle was restated in the *Carter* case[29] as follows:

> Where ditches are shown to have been entitled by ancient use to take from a stream a definite proportion of the water normally flowing therein the same division is to be maintained in times of diminished flow. *Peck* v. *Bailey, supra.* The rule is the same where the division is by time instead of proportion of the water. *See Yick Wai Co.* v. *Ah Soong,* 13 Haw. 378, 382. * * *

[28] *Peck* v. *Bailey,* 8 Haw. 658, 672-673 (1867).

[29] *Carter* v. *Territory of Hawaii,* 24 Haw. 47, 60-61 (1917).

It was also held in the *Carter* case, as noted more fully under the next topic, that the same rule, with certain qualifications, applies likewise to lands served by a single ditch; and in analyzing the right of the petitioner to water for irrigation purposes, the court stated (at p. 66) that the right that accrued at the time of the grant of the land was not permanently fixed as to quantity, but was subject to proportional diminution in case of drought or natural depletion of the common supply as in case of other lands watered by the system, "either *konohiki* or *kuleana*" (the quoted phrase being placed in parentheses).

In the *See Yick Wai* case, cited in the above quotation, there had existed from time immemorial an opening in a dam through which water had passed to lower users, the ditch that diverted at the dam taking thereby only a portion of the accustomed flow. At a time of serious drought the upstream users closed the gap in the dam in order to divert more water than was entering their ditch automatically. This, it was held (at pp. 382-383), they had no right to do. "In times of drought, the dam and ditch must remain in the same condition substantially as in times of plenty, and all must suffer accordingly. And this accords with natural justice." *Peck* v. *Bailey* was cited in support.

The general rule appears to be well established. However, as noted in the discussion immediately below, advantages in time of drought may accrue because of location on the stream even as among holders who are entitled to a specific proportion of the flow.

Priorities Resulting from Location May Attach to Some Rights

In some cases the holder of a water right is entitled to use as much of the stream flow as can be diverted at a given point by means of the works that existed when his right was established, or by means of works of comparable capacity. Under such conditions he has, of course, a priority because of that location. For example, he may have, by custom, the right to divert all the water that is capable of being diverted by a loose stone dam, the next lower auwai being entitled to only the overflow and seepage; and in such case the heading of the lower auwai may not be moved upstream in order to divert water by means of the same dam.[30] Rights exercised by means of loose dams are limited to the quantities of water that can be diverted thereby; but the rebuilding of such dams is not objectionable where no injury results to others.[31]

The general principle that in case of drought or diminished supply, the flow in one ancient ditch may not be increased by artificial means to the detriment of lands entitled to water from another such ditch, but that the dams must remain as they were and that all must suffer accordingly, was approved in the *Carter* case.[32] The court pointed out, however, that in the cases that had applied the theory of proportional diminution, the matter of a permanently diminished supply was not involved, nor had losses by seepage and evaporation been a prominent feature (at p. 61). It was further pointed out that "under the rule that in a time of drought the dams and

[30] *Chun Lai* v. *Mang Young*, 10 Haw. 133, 135 (1895).

[31] *Wong Kim* v. *Kioula*, 4 Haw. 504, 505-506 (1882); *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 68 (1917).

[32] See syllabus in *Carter* v. *Territory of Hawaii*, 24 Haw. 47 (1917).

ditches must be permitted to remain in the same condition as in times of plenty, it would follow that if the flow of water in a stream is insufficient to reach the lower points of intake the owners furthest down would be entirely without water."

The only modification of the rule of proportional diminution actually made in the *Carter* case was with respect to lands served by a single ditch. The syllabus by the court states this qualification as follows:

> The general principle of proportional diminution in times of scarcity applies as well to different lands along one ditch as between different ditches from the same stream, but where the supply has greatly diminished the rule will not be applied as between the several owners on a long ditch if the entire flow would be lost through seepage and evaporation.

The court stated in the opinion that Hawaiian custom seems to have recognized that the general principle of proportional diminution in time of drought applies to different lands along one ditch;[33] but that the rule must be taken with some qualification where the normal flow of the stream had greatly diminished through the years and where, in an attempt to send a supply of water down the ditch to distant lands, the entire flow would be consumed by seepage and evaporation. In such case, "it would be absurd to hold" that the flow in the ditch must not be materially diminished and that other lands having irrigation rights might not have the available water.

It was not necessary in the *Carter* case to qualify the rule with respect to different ditches. However, the reasoning in support of the qualification with regard to lands along one ditch would apply with equal force to different ditches along the same stream, if the result of an enforced proportional diminution of water were to deprive upstream ditches of a portion of their accustomed supply only to have the resulting flow lost in transit in the channel before it could reach the downstream ditches. Should such a case arise, it is reasonable to assume that the court would allow the upstream ditches to divert and use water that otherwise would go to waste; for it is inconceivable that water would be required to be wasted simply to satisfy a barren right.

It would appear, in short, that even if all ditches which divert from a stream are entitled to specific proportions of the normal flow, the upstream users in case of an extreme drought may have an advantage by reason of the location of their points of diversion. This may be more of an academic than a practical consideration in Hawaii, where the characteristic drainage areas are short and steep (see p. 8). In any event, it would be of practical importance only in case of a stream on which a considerable gap existed between two groups of diversions.

Damages for Injury

Most of the water-right cases that have reached the supreme court, which have involved claims for damages, have dealt with alleged unlawful diversions of water or interference with the claimant's right or means of diversion (see p. 64). One case, however, concerned damage that resulted from the

[33] Citing, at pp. 61-62, practices referred to in *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 660 (1895), and *Horner* v. *Kumuliili*, 10 Haw. 174, 178 (1895).

failure of a dam behind which water had been impounded for irrigation and other purposes.[34] This dam had been constructed in an opening in the rim of an extinct volcano. The court found ample evidence to support the claim that the dam had not been properly or scientifically constructed, and that the failure resulted from that fault and not from the freshet which the dam was not strong enough to withstand. The rule of law invoked was, as stated in the syllabus by the court:

> The owner of a dam must use reasonable care and skill in so constructing and maintaining it that it will be capable of resisting the water of a stream in times of ordinary, usual, and expected freshets, and if he does not do so he will be liable for any injuries resulting from his neglect.

Purpose of Use of Water

Purposes for Which Rights Have Been Acquired

The principal uses of water that have been involved in controversies that have reached the supreme court, have been for drinking and other domestic purposes and for irrigation, most of the cases having concerned irrigation rights. These were the ancient uses of water, rights to which were tacitly recognized in connection with the occupation and use of land prior to the period of land reform and which have become established in many judicial controversies. Crops for the cultivation of which water rights have become vested are principally taro (kalo), rice, and sugar cane.

The use of water for supplying a fish pond was recognized in an early decision as the subject of a valid right.[35] The water was being used for both the fish pond and for household purposes; the water commissioners had judged that the claimants were entitled to no more water than necessary for their household use, but the supreme court held that they were entitled to use whatever water they had acquired for any purpose they saw fit.

The use of water for the generation of electricity was involved in a case[36] that has been discussed heretofore (see p. 123). The case involved the construction of a lease, and the fact that a water right might be acquired for the purpose of generating electricity was not questioned.

Domestic Use the Superior Right

A brief reference was made in an early case[37] to the distinction between natural and artificial uses of water, but without passing upon the point, as stated heretofore in connection with the riparian doctrine (see p. 87). In the *Carter* case[38] the distinction was actually made. The court stated (at p. 57) that private water rights in the Territory were governed by the common law of England except as modified by or inconsistent with Hawaiian statutes, custom, or judicial precedent, and referred (at p. 62) to the right of certain parties to water for domestic use as a "primary" right. It was later stated (at p. 66):

> It is well established at common law that the ordinary and natural use of water for household purposes, i. e., for drinking, washing, cooking, and for watering domestic animals, is a superior right to the use of water artificially,

[34] *Hau* v. *Palolo Land & Improvement Co.*, 20 Haw. 172, 174 (1910).
[35] *Kaalaea Mill Co.* v. *Steward*, 4 Haw. 415, 416-417 (1881). See further reference to this case below, p. 139.
[36] *Cross* v. *Hawaiian Sugar Co.*, 12 Haw. 415 (1900).
[37] *Wailuku Sugar Co.* v. *Widemann*, 6 Haw. 185, 187 (1876).
[38] *Carter* v. *Territory of Hawaii*, 24 Haw. 47 (1917).

> i. e., for mining, agricultural and commercial purposes. Gould on Waters (3d ed.) Sec. 205; 2 Farnham on Waters, Sec. 467. And we have no doubt that such is the law of this Territory. The ruling made in *Kaalaea Mill Co.* v. *Steward,* 4 Haw. 415, to the effect that where land has a water right the owner may use the water for any purpose he sees fit is not to the contrary. The question whether in case of diminished flow the right to water for artificial purposes would have to yield to the right for domestic use was not before the court in that case. * * *

Further reference was made to "the primary right of the lands having appurtenant rights to take water for domestic purposes" (at p. 69); and in the adjudication of rights, first preference was given to the lands "entitled, in accordance with ancient custom, to water from the stream for domestic use" (at pp. 70-71). Furthermore, in the adjudication of riparian rights in the freshet waters of the stream, each ahupuaa was held entitled to a reasonable use of the water first for domestic use on the upper ahupuaa, then for domestic use on the lower ahupuaa, and finally for artificial purposes upon each ahupuaa (at p. 70).

It may be noted that the first preference as to the stream waters for domestic use which was accorded in the *Carter* case was in connection with appurtenant water rights — elsewhere termed ancient appurtenant rights. This appurtenant right of domestic use was distinguished from the rights in gross accorded by statute to lawful occupants of land within a privately owned ahupuaa (see p. 101 above). Furthermore, the right to water that was being furnished to homesteaders by the Territory was not placed within this preferential class; on the contrary it was held to be a new use which could not be exercised to the detriment of the preexisting vested rights of others (at p. 67).

Valuation and Taxation of Water Rights

The present taxation statute (originally enacted in 1932, and since amended) provides that "property" or "real property" shall include "all land and appurtenances thereof," as well as buildings, structures, fences, and improvements, but excluding various items including "pipelines, gas and water mains and appurtenant equipment, penstocks and forebays"; these latter being included under "personal property."[39] The statute also provides that in determining the value of land, consideration shall be given, among other things, to "water privileges, availability of water and its cost, easements and appurtenances"; and that it is the duty of the Territorial tax commissioner to apply methods of assessing taxable real property designed to secure, so far as practicable, uniform results throughout the Territory.[40]

Appeals from assessments upon real or personal property may be taken to the board of review for the taxation division in which the property is located, or directly to the tax appeal court, as the taxpayer may prefer; and if the appeal is taken to the board of review, either the taxpayer or the assessor may appeal to the tax appeal court from the decision of the board

[39] Original enactment, Laws Haw. 2d Sp. Sess. 1932, Act 40. "Real property" is defined in Rev. Laws Haw. 1945, sec. 5101, amended by Sess. Laws 1945, Series A-91, Act 79, s. 1; "personal property" is defined in sec. 5631. See also sec. 5251.

[40] Rev. Laws Haw. 1945, sec. 5146, amended by Sess. Laws 1945, Series A-91, Act 79, s. 9.

of review.[41] From the decision of the tax appeal court, either the taxpayer or the assessor may appeal to the supreme court.[42]

Valuations of Water Rights

Valuations of water properties under the earlier tax laws were involved in several decisions of the supreme court.[43] It was held in an early case[44] that the value of a ditch for purposes of taxation must be based upon what it is worth, and not upon its cost of construction, inasmuch as the utilitarian value and not the cost of the ditch would determine its market value for purposes of sale. "Substantially, then, the value of the water must be taken to be the value of the ditch, for there is nothing of considerable value that can be moved from its site." As the value of the water was thus included in the taxable value of the ditch, it was held double taxation to assess the ditch to its owners and likewise the distributive shares of water to the water users, by enhancing the value of the lands so irrigated.[45] Considerations of water supply have necessarily entered, in other cases, into the valuations of sugar plantations for tax-assessment purposes, in view of the water requirements of cane.[46] In one tax case an assessment upon water rights of $250,000 was sustained, as the holder had purchased the rights for $257,500 only two days before the assessment date.[47] This case is discussed in more detail below in connection with principles of taxation (see p. 133).

The valuation of water rights was in issue in a case in which the assessor added an item of $100,000, for two-thirds of the water rights in a valley, to the value of lands assessed as including appurtenant water rights.[48] The valuation returned by the taxpayer was based upon the rental value of his parcels as wet lands, and the assessments also were based upon the revenue from and productiveness of the lands as wet lands and on the value of neighboring property of the same character. The main reason for adding

[41] Rev. Laws Haw. 1945, secs. 5160, 5211, 5212.

[42] Rev. Laws Haw. 1945, sec. 5214.

[43] In addition to the cases cited in the ensuing discussion with respect to valuation of water properties, see *Haiku Sugar Co.* v. *Birch*, 4 Haw. 275 (1880); *In re Taxes, John Ii Estate*, 15 Haw. 546 (1904); *In re Taxes, Hui of Kahana*, 21 Haw. 676 (1913). The properties in the case last cited were subsequently in litigation in *Foster* v. *Waiahole Water Co.*, 25 Haw. 726 (1921), which was not a tax case. See other references to the *Foster* case herein, particularly pp. 121 and 132.
The value of water developed from tunnels was involved in *Wall* v. *Campbell*, 32 Haw. 275 (1932), which was not a tax case. The value of water with respect to purposes other than taxation was also involved in *Scharsch* v. *Kilauea Sugar Co.*, 13 Haw. 232 (1901), in which the court discussed computations of losses resulting from the claimed infringement of a water right.

[44] *Alexander* v. *Fornander*, 6 Haw. 322, 325 (1882). This decision was cited with approval in *In re Taxes, Onomea Sugar Co.*, 25 Haw. 278, 288-289 (1920), as having held "that the cash value of an irrigation ditch for tax purposes is what it is worth as a utility rather than what it cost because nothing of considerable value can be moved from its site." This reference was made in connection with the court's discussion of depreciation as an element of methods of arriving at the cash value of properties involved in the taxation cases then before the court. This latter decision was not particularly concerned with the valuation of water rights or water properties, although the court later (at p. 298), in connection with its discussion of one of the sugar companies involved, called attention to the discrepancies between the valuation of some items in the detailed return of that company and the valuation of the same items in the statement of assets also included in the return; one of these discrepancies relating to flumes, ditches, and pipe lines, of which these respective valuations were $6,000 and $30,000.

[45] See also *Haiku Sugar Co.* v. *Fornander*, 6 Haw. 532 (1884).

[46] See, for example, *Tax Assessment Appeals*, 11 Haw. 235, 240 (1897), and *Lihue Plantation Co.* v. *Farley*, 13 Haw. 283, 284 (1901). Each of these cases arose under the provision of the former law which required several kinds or parcels of property when combined as the basis of an enterprise for profit to be assessed as a whole (Laws Haw. 1896, Act 51, s. 17).

[47] *In re Taxes, Waiahole Water Co.*, 21 Haw. 679, 682 (1913).

[48] *In re Taxes, C. W. Booth*, 15 Haw. 516, 517-520 (1904).

the item of $100,000 for two-thirds of the water rights in the valley, according to the court, was that the taxpayer and others had nearly succeeded in getting through the legislature a bill appropriating $150,000 for the purchase of all water rights in the valley, with sites of the springs, reservoir sites, rights of way, etc. All three justices filed opinions, one of them dissenting. The majority, while differing somewhat in their treatment of the assessment of $100,000, were agreed that the attempted sale of all water rights in the valley as a part of one transaction for $150,000 was not a proper basis for valuing a fractional part of the rights in the valley at a proportionate figure; and as noted below, they both agreed that the surplus value, if any existed, above that already included in the assessment of the lands to which the rights were appurtenant, could not be further assessed apart from the land.

Principles Relating to Taxation of Water Rights

The cases, so far reported, that have involved the taxation of water rights arose under the earlier laws.[49] One of the early decisions[50] held that where the owners of a ditch company were using all the water on their own lands, but had not treated their interest in the water as appurtenant to their lands—and it being not shown that the ditch shares could not be sold elsewhere, or that the land could not be sold without a proportional share of the water and that it would be so intended without an express conveyance of such a share in the ditch—the rights of the parties were unlike those of riparian proprietors and equally unlike those appurtenant to land from ancient watercourses; and the property of the ditch company could not be taxed as merged in the other property of the owners, but was rightly taxed as a separate piece of property. Doubt as to the soundness of that reasoning was expressed parenthetically in the opinion in a subsequent case[51] which involved taxation of the same water supply; but the writer of the opinion did not consider himself at liberty to question its soundness in the case at bar, because the water had been assessed to the ditch company on the authority of that previous decision, and the point here involved was the taxation of land, irrigated from that ditch, at an enhanced value because it was irrigated land. This was held to be double taxation, inasmuch as the water had already been taxed as the property of the ditch company.[52]

In the *Booth* case,[53] discussed above, under "Valuations of water rights," the two justices who agreed that the valuation of $100,000 on two-thirds of the water rights in the valley was not proper, referred not only to the find-

[49] In addition to the cases cited herein, see *In re Taxes, John Ii Estate,* 15 Haw. 546 (1904), concerning a controversy as to whether an assessment was on forest land or on a water privilege alone.

[50] *Haiku Sugar Co.* v. *Birch,* 4 Haw. 275, 277-278 (1880).

[51] *Haiku Sugar Co.* v. *Fornander,* 6 Haw. 532, 533 (1884).

[52] The same point—that is, double taxation of the water—with reference to land served by the same ditch, had also been decided in *Alexander* v. *Fornander,* 6 Haw. 322, 324-325 (1882). Both this case and *Haiku Sugar Co.* v. *Fornander* were decided by single justices, no appeal being taken in either instance to the full court. It may be noted that Justice McCully, who wrote the opinion of the court in *Haiku Sugar Co.* v. *Birch,* referred in *Alexander* v. *Fornander* to the *Birch* case as having decided that the ditch was separate property and not appurtenant to the land of the shareholders, but without commenting in any way upon the reasoning as did Chief Justice Judd two years later in *Haiku Sugar Co.* v. *Fornander.*

[53] *In re Taxes, C. W. Booth,* 15 Haw. 516 (1904).

ing of the tax appeal court that the assessments of the parcels of land with water rights were fair and even high, but pointed out that there was nothing to indicate what surplus value, if any, of the water rights was not included in the assessment of the land. The opinion of the court, written by the chief justice, states (at p. 517) that:

> Whether water rights that are solely appurtenant to and used in connection with particular lands may be assessed separately or not, it is unnecessary to say. No doubt such water rights may be more valuable for other purposes than for those to which they are applied, just as a town lot used as a pasture for the time being may be valued as suitable for agricultural or residence or business purposes. * * *

The syllabus of this case, quoted herein in full, states the following rule with respect to the separate assessment of a surplus of value of water rights already assessed as appurtenant to particular lands:

> If land with water rights appurtenant thereto and used solely in connection therewith, is assessed in full, including whatever added value it has by reason of such water rights when used solely in connection therewith, such water rights cannot be further assessed apart from the land, as to the whole or a part of their value, even if they may be worth more for other purposes than when used in connection with the lands to which they are appurtenant, and even if the land with such water rights might have been assessed higher because of the other purposes to which the water could be applied, and even if the water rights could be assessed separately if they had not been included in the land.

Two cases[54] were decided on the same day with respect to the assessment of water rights, which in one instance had been leased and in the other case purchased by the Waiahole Water Company; the rights prior to the conveyances having been appurtenant to lands on the windward side of the Koolau Range of Oahu and acquired by the company for use in the Ewa district in the leeward portion of the island. The water company on December 21, 1912 leased from the Hui of Kahana rights to certain surplus waters of the Ahupuaa of Kahana, the lands of which, exclusive of individual holdings, were owned by the hui; and on December 30 of that year the company purchased from one of the members of the hui, and from a water company, their rights in certain surplus waters appurtenant to three ahupuaas including Kahana and in prescriptive and other waters, if any, owned by them. The leased waters, as of January 1, 1913, were assessed to the hui, and the purchased waters to the Waiahole Water Company.

The supreme court held, in the *Hui of Kahana* case, that the assessment against the hui was not authorized by statute, inasmuch as the hui as such was not a legal entity, its property being held in undivided interests by the

[54] *In re Taxes, Hui of Kahana,* 21 Haw. 676 (1913), regarding the leased rights; and *In re Taxes, Waiahole Water Co.,* 21 Haw. 679 (1913), regarding the purchased rights. The facts relating to these transactions are stated more fully in *Foster* v. *Waiahole Water Co.,* 25 Haw. 726, 727-728 (1921), which went to the supreme court on submission upon an agreed statement of facts and which did not concern the taxation of these water rights.

members themselves as tenants in common.[55] The value of the interest of each member in the water rights "should be assessed, either separately or as a part of the land as the law may require or permit, directly to the member himself" (at p. 679). It was therefore considered unnecessary to determine whether under the circumstances of the case a separate assessment on the water rights would be invalid as against the members, either because the water rights were included in the description of the ahupuaa returned by and assessed to them, or because the water rights and all other interests or parts of the ahupuaa were still united in ownership.

In the other case (the *Waiahole Water Company* case) it was held that there was no error in assessing the water rights purchased by the company separately from the ahupuaas and other lands to which they were formerly appurtenant; for by the acts of the company and its grantors, the water rights had been severed in ownership from those lands prior to January 1, 1913 and could not then be regarded, for purposes of taxation, as appurtenant to such lands. The water rights "were certainly not assessed or assessable to the grantors" (at p. 682) on that date, for they were no longer their property; hence there was no duplication of assessments upon the same water rights. Furthermore, the assessment of $250,000 upon those rights was sustained, as against the company's contention that the water was then of no value because the tunnels and ditches had not been completed and the water was still flowing into the sea. The purchase price of $257,500 which the company had agreed upon two days before the assessment date, was held sufficient to support the valuation.

[55] The peculiar Hawaiian institution known as the "hui" was further described in the *Kahana* case (at pp. 678-679) as "neither a corporation nor a partnership. The title to its lands is not in a trustee for its use and benefit but is held in undivided interests by the members themselves as tenants in common." As the hui is not a legal entity, it cannot sue or be sued; and in one case, where the executive committee brought action on behalf of the hui, it was held that the petitioners were not proceeding as officers of the hui but as representatives of a majority of the members authorized at a meeting of the hui to take action; hence to maintain a suit in equity for a decree nullifying an unauthorized lease by one shareholder to one respondent and mortgage of the leasehold by lessee to another respondent, and restoration of premises to members of the hui, the petitioners must bring themselves within the rule that in equity all persons materially interested be made parties, or within the exception that where the parties are numerous and cannot be joined without great inconvenience a few may sue for themselves and all others similarly situated (*Smythe* v. *Takara*, 26 Haw. 69, 71-72 (1921)). The fact that the members of a hui, who own shares in the institution, are tenants in common of the property for the management of which the hui is organized, has been recognized in a number of cases; but it has also been held that the rules for management of the common property are mutual agreements which bind the tenants so long as unrescinded (*Burrows* v. *Paaluhi*, 4 Haw. 464 (1882)), whether they take the form of articles of copartnership or of a constitution and bylaws (*Mahoe* v. *Puka and J. N. Paikuli*, 4 Haw. 485, 486 (1882)), and that this applies to the setting off of specific portions of the land for occupancy in severalty (*Lui* v. *Kaleikini*, 10 Haw. 391, 393-394 (1896)). The fact of a custom among members with respect to individual occupancy was recognized in *Pilipo* v. *Scott*, 21 Haw. 609, 613 (1913), and *Scott* v. *Pilipo*, 24 Haw. 382, 385 (1918). "The impracticability of using land owned in common for residence or agricultural purposes is apparent, hence the practice of Hawaiian huis by custom or written regulation to provide for the occupation in severalty of portions of the common property. It is undoubtedly competent from a legal standpoint for the cotenants to make such an arrangement." (*Scott* v. *Pilipo*, 22 Haw. 174, 180 (1914).) The adoption of regulations constitutes the members a voluntary association in which they are subject to valid regulations with reference to the holding of portions of the land in severalty; the right of a dissatisfied member to demand partition is always available (*Scott* v. *Pilipo*, 23 Haw. 349, 352 (1916)). It has also been said that the hui "also has, pursuant to its rules and customs, certain powers as an association, which do not belong to its members individually as tenants in common. Among these powers is that of binding all its members at a regularly called and duly attended meeting, to a lease of their land, by a vote not unanimous. This power, analogous to that of partnership and not incident to tenancy in common, has been recognized in principle by this Court." (*Foster* v. *Kaneohe Ranch Co.*, 12 Haw. 363, 364 (1900).) It was held in *Foster* v. *Waiahole Water Co.*, 25 Haw. 726, 735 (1921), that a cotenant—that is, the owner of shares in a hui—might convey his undivided interest in the water rights of the hui to a third party, by a deed valid as between the grantor and grantee and voidable by the nonassenting tenants in common only to the extent that the transfer is prejudicial to them. See also, as to the purposes of forming huis and controversies that have arisen concerning them, *Un Wo Sang Co.* v. *Alo*, 7 Haw. 739 (1889); *Scott* v. *Pilipo*, 24 Haw. 277, 282-283 (1918); *Moranho* v. *de Aguiar*, 25 Haw. 267 (1919); *Brown* v. *Kaahanui*, 29 Haw. 804, 808-809 (1927).

Another point decided in the *Waiahole Water Company* case related to the exemption accorded by the then existing statute in favor of property used solely for the purpose of distributing water to the general public for irrigation, agricultural, and domestic purposes.[56] It appeared that all except 9 of the 10,000 shares of the company's stock were owned by the Oahu Sugar Company, and the conclusion reached from the evidence was that the primary purpose of the project was to supply water to this sugar company for plantation purposes, and only incidentally to furnish water for sale to the general public. Under such circumstances the water system could not be considered as in the exempted class, for to secure the exemption "it must appear that the property is being 'actually and solely used' in the construction, operation and maintenance of a water system created to distribute water for sale to the general public" (at pp. 681-682).

Changes in the Exercise of Water Rights

The conditions which are imposed upon the exercise of a water right are intended to safeguard the rights of others who depend upon the same source of water supply. Alteration of the conditions is not allowed if the result is to injure others; but so long as others are not hurt, there is no valid reason for denying the holder of a water right the privilege of bettering his own situation. Hence, "It has been held that water appurtenant to land for household purposes may be put to a different use; that water appurtenant to one piece of land may be used on another piece provided no one's rights are infringed by the change; and that improved methods for diverting water may be made use of upon like condition."[57]

Change in Point of Diversion

The holder of a water right may change the point of his diversion of the water, so long as the existing rights of others are not being impaired. Thus the building of a new dam about 50 feet upstream from the former dam was upheld where the rights of other parties were not shown to be injured.[58] But one entitled to use only the overflow and seepage from an upstream dam was not allowed to change his diversion upstream in order to be able to take water from that upper dam, for another auwai was held entitled to divert the quantity of water that usually had been turned into it from that dam.[59]

Where a party had the right to divert water from five streams on three lands, all of the streams uniting before leaving his lands, it was held to be immaterial to the holders of rights on the lower part of the stream from what branches the upstream holder diverted the quantities of water to which he was entitled.[60]

The supreme court had for consideration questions, submitted upon an agreed statement of facts, concerning the relative rights of two leaseholders,

[56] This statute, originally enacted in 1907 (Sess. Laws Haw. 1907, Act 136, s. 1), accorded the exemption from taxation for a period of 10 years from and after January 1, 1908 in favor of such water systems constructed after that date. The statute was twice amended and the period of exemption extended for 10 years in each case (Sess. Laws 1917, Act 110, s. 1, and Sess. Laws 1927, Act 95, s. 1), the last extension being for 10 years from and after January 1, 1928 (see Rev. Laws Haw. 1935, sec. 1978). The provisions of sec. 1978 of the Revised Laws of 1935 relating to this matter are omitted from the Revised Laws of Hawaii, 1945.

[57] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 69 (1917).

[58] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 51, 68 (1917).

[59] *Chun Lai* v. *Mang Young*, 10 Haw. 133, 135 (1895).

[60] *Wong Leong* v. *Irwin*, 10 Haw. 265, 269-270 (1896).

both claiming the right to develop power on the same stream.[61] The facts have been stated more fully heretofore (see p. 123). As stated above, the court held that the plaintiff, holder of the later lease which specifically related to power, had the right to develop power from the stream in question, subject to the right of defendant under the earlier lease (which had not referred to the use of the stream for generating electrical power) to divert water at any point on the stream—even above the hydroelectric works that plaintiff might construct—for conveyance to the demised premises. The question presented was as to which party had the right to use the power of the running and falling stream for generating electricity, not whether the defendant might change its point of diversion upstream; but in answering the question the court appears to have acknowledged the right of defendant to make such change even though the effect would be to deprive the plaintiff of the use of the portion of the water so diverted, inasmuch as the existing diversion of defendant was below the junction of the streams that were involved in plaintiff's lease. The court's statement was doubtless based, at least in large part, upon the fact that plaintiff's rights under his lease were made expressly subject therein to defendant's rights under the earlier lease. Otherwise this holding would have been at variance with the general principle governing changes in point of diversion.

Change in Method of Diversion

The method of diverting water may likewise be altered, and improved, if others are not injured. It has been held specifically that a concrete dam may be substituted for one of rubble of loose construction, if its maintenance works no injury to other claimants.[62] In an earlier case downstream users were found to be entitled to only the water that escaped through or under a dam of loose stones, which had to be rebuilt frequently with stone and sod as the result of damage by recurring freshets.[63] The dam was eventually rebuilt durably of stone and cement; and the evidence showed that it was low enough to pass freshet water and that about as much water reached the lower portion of the stream as formerly. As the downstream users had not shown that the existence of the new dam impaired or interfered with their rights to the excess water, the court declined to order its removal. Nor is the rebuilding of dams in slightly different locations objectionable, where the river bed is altered by freshets and where no more water is being diverted than the owners are entitled to; nor the enlargement of an auwai, so long as the quantity of water carried thereafter is within the owner's rights.[64]

However, where an easement exists in the land of another for one kind of conduit across such land, the holder of the easement cannot substitute another kind of conduit without the consent, express or implied, of the landowner,[65] even though the substitution might result in a lesser burden on the

[61] *Cross* v. *Hawaiian Sugar Co.*, 12 Haw. 415 (1900).

[62] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 51, 68 (1917).

[63] *Wong Kim* v. *Kioula*, 4 Haw. 504 (1882).

[64] *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 657, 665 (1895). The court also sustained the decision of the commissioner in refusing to order the removal of a dam which was not being used for an illegal purpose.

[65] *Oahu Railway & Land Co.* v. *Armstrong*, 18 Haw. 258, 261-262 (1907). An iron pipe had been substituted for a wooden pipe, which in turn had been substituted for a wooden box and a culvert, both of which were in different locations from the pipe. The burden of proving consent was on the holder of the easement.

land.[66] (See p. 119 above.)

Change in Location of Canal

One may also change the location of his canal if the change does not adversely affect the rights of others.[67] As in the exercise of water rights generally, the limitation as to the rights of others would apply to changes in the location of one's canal on his own land as well as elsewhere.

> The change in the place of the water course on his own land is justified on the same principles. These changes of the ditches, or of the water, depend upon the question whether injury is inflicted on others. The complainants have not sustained the allegation of injury.[68]

This limitation is important in protecting water users under the intricate distribution systems in the older irrigated areas of Hawaii.

As shown heretofore (see pp. 118, 121, and 135), one who has an easement for the location of a canal or other conduit across the land of another may not change the location of the conduit (nor its size or character) without the express or implied consent of the owner of the servient estate.[69]

Change in Place of Use

The General Rule

It is a settled rule of Hawaiian water law that, if land has a water right appurtenant to it, the holder of the water right may change the place of use of that particular quantity of water to other land—always providing that the rights of others are not impaired by the change.[70] There is "no objection either in law or reason to allowing" such transfers.[71] The rule was stated in the earliest reported Hawaiian case on water law—*Peck* v. *Bailey, supra*—in which the right of defendant to use the water of his kalo land on kula land (dry land, i.e., land without an appurtenant water right) was sanctioned. It was held that no injury was thereby done to land of plaintiffs that had formerly received the drainage from the kalo land, inasmuch as the original plan of irrigation of the kalo land had not contemplated such drainage for the use of plaintiffs (at pp. 668-670). Plaintiffs had no easement in that flow of water and hence no right to prevent its diversion elsewhere. (See p. 80 above.)

The rule applies not only to the right to use a continuous flow of water, but also to the use of water assigned to a particular land on a definite day under a rotation schedule.[72]

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[66] *Medeiros* v. *Koloa Sugar Co.*, 29 Haw. 43, 45 (1926). A right of way had been granted for use "either for a flume or a ditch," the words "either" and "a flume or" being stricken with ink lines. Only a flume had been installed. It was held that the grant in unambiguous language had prescribed that the right of way was to be used for a ditch; that the striking out of the deleted words emphasized the correctness of this view, but that even without this aid, the terms and meaning were clear; and that as the grant related to a ditch, whether a ditch or a flume constituted the lesser burden upon the servient owner need not be considered. In the *Oahu Railway* case it was said, at p. 262, that where there had been a substantial alteration in the method of use, and in the dimensions and location of the conduit, the fact that these changes may have benefited the servient estate was immaterial.

[67] *Liliuokalani* v. *Pang Sam*, 5 Haw. 13 (1883).

[68] *Peck* v. *Bailey*, 8 Haw. 658, 673 (1867).

[69] *Scharsch* v. *Kilauea Sugar Co.*, 13 Haw. 232, 236 (1901); *Oahu Railway & Land Co.* v. *Armstrong*, 18 Haw. 258, 261-262 (1907); *Medeiros* v. *Koloa Sugar Co.*, 29 Haw. 43, 45 (1926).

[70] See *Peck* v. *Bailey*, 8 Haw. 658, 666, 673 (1867); *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 699 (1904); *Tsunoda* v. *Young Sun Kow*, 23 Haw. 660 (1917); *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 69 (1917).

[71] *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 665 (1895).

[72] *Horner* v. *Kumuliilii*, 10 Haw. 174, 180 (1895).

The rule applies likewise to the transfer of water from one ahupuaa to another: "There is no difference in principle between a transfer from one place to another in the same ahupuaa and a transfer from one ahupuaa to another."[73] Whether or not such transfers were actually made in ancient times, and therefore were sanctioned by ancient usage, was held in the *Wong Leong* case to be not controlling; if they were not then made, "it was no doubt in most instances because there was no occasion or means for making them, as there is now, with the changed conditions of population and society, the diversification and extension of agricultural industries and the possession of capital and engineering skill and appliances." The lower landowners here failed to show that they would be injured by the change of place of use. (See pp. 67, 82, and 88, above.) The right to make such transfer from an ahupuaa to far distant lands was inferentially recognized in a more recent case which involved questions arising out of the operation of a lease.[74] The right of transfer was also upheld in the *Gay* case[75] with respect to an ili kupono, the diversion being made to an ahupuaa lying in a different watershed.

The kuleana rights that have been involved in the supreme court cases concerning transfers of place of use have been mainly, as would be expected, rights for the cultivation of taro (kalo). The quantity of water necessary for taro cultivation has therefore measured in such cases the right of use on the new lands, which in most of the cases have been cane lands.[76] (See pp. 62, 107, and 115, above.) Where such transfers to new lands have been involved, the quantity of water, and not the area of land irrigated, has measured the extent of the old right; hence, as a given area in taro requires considerably more water for successful cultivation than does the same area in cane, it has been recognized by the courts that upon the transfer of an old taro right to kula land for cane culture, an area considerably larger than that which was formerly in taro may be irrigated with the quantity of water that attached to the old taro right.[77]

Limitations of the Rule

The burden is upon the one who seeks to change old water rights to new lands, to make the change without injury to others and to prove that it has been made, if at all, without such injury.[78] In this instance, water to which old lands had been entitled was being diverted by respondent at Maniania dam—a newly constructed dam, upstream—for use on new lands, the ancient right to a continuous flow having been converted by prescription into a daytime (4:00 A. M. to 4:00 P. M.) right. (See p. 113 above.) An appreciable time elapsed before water released at Maniania could reach the downstream diversion facilities through which other parties were served. The court held that a necessary condition of the right to transfer the diversion and place of use was that the water be released at Maniania at a sufficiently early hour each day to reach the lower users by 4:00 P. M., the hour at which their rights of use began.

[73] *Wong Leong* v. *Irwin*, 10 Haw. 265, 270-272 (1896).

[74] *Foster* v. *Waiahole Water Co.*, 25 Haw. 726 (1921). A transfer of purchased water rights had also been recognized in *In re Taxes, Waiahole Water Co.*, 21 Haw. 679, 682 (1913), wherein it was held that the separation of the water rights from the lands to which they were formerly appurtenant, rendered them not liable to taxation thereafter as appurtenant to those lands.

[75] *Territory of Hawaii* v. *Gay*, 31 Haw. 376 (1930).

[76] In *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 560 (1904), the land to which a right of transfer was claimed was in rice.

[77] See *Lonoaca* v. *Wailuku Sugar Co.*, 9 Haw. 651, 665 (1895); *Wong Leong* v. *Irwin*, 10 Haw. 265, 267-269 (1896).

[78] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 693-695, 699 (1904).

It was likewise held that to allow respondent to divert, at Maniania, water under night rights transferred to Maniania from downstream taro lands, would necessarily deplete the supply of holders of other downstream taro rights, all of whom took water jointly at night; hence an injunction against night diversions at Maniania was authorized.

One who transfers the use of water from old to new lands cannot thereby enlarge the basis of his right. Where such a transfer is made from kalo (taro) to cane lands, "He is limited to the same quantity of water to which he was entitled on his kalo land by immemorial usage."[79] In two of the Wailuku (Iao) Stream cases the court cautioned against unwarranted increases in the use of water as the result of purported transfers to new lands. It was stated in the decision on the plea in bar, with reference to the *Lonoaea* decision: [80]

> It is clear that it was decided, and properly so under the pleadings, that the defendant could irrigate by means of the flume and otherwise the land then in question which had no water rights, provided it refrained from using water belonging to other lands in such quantity as not to prejudice others in the enjoyment of their rights. This point was covered by the pleadings, was actually litigated and expressly decided. Of course the defendant could not continue to use the water on the new lands and at the same time resume the use of the water on the old lands, nor did the decision settle whether it could make other transfers of water in the future.

And in the decision on the merits the court stated:[81]

> Where water has been transferred to kula land from ancient taro lands, the proprietor, after the use on the kula lands has continued for the statutory period, is too likely to be led to indulge in the view that the kula has acquired a prescriptive right to the water and that the taro lands have at the same time retained their ancient right and not lost it by abandonment. That, of course, is a mistaken view. Water rights cannot be doubled in that way. In the *Lonoaea* case the court, on making its estimate of the total of respondent's rights, doubtless sought to avoid committing that mistake.

An essential qualification of the rule that sanctions transfers of place of use was applied in a proceeding for the settlement of water rights of all of the wet lands in Palolo Valley, Oahu, owing to the fact that "the waters passing by seepage and overflow to adjoining lands and subsequently into one or the other of the main streams are, especially in the dry seasons, a real and an important part of the supply for such adjoining lands and for other lower lands and are a part of the supply to which such dominant lands are entitled."[82] Hence the transfer of water from unused land having an old right, to a tract without water rights, could not include all the water appurtenant to the former tract, "but only as much as would be consumed on the land itself in the cultivation of taro."

The right to change the place of use of water in one case was denied because of manifest injury to holders of other water rights.[83] The water originated in springs in kalo patches owned by defendant, the patches being surrounded with banks through which the excess water flowed into a natural watercourse; the defendant and others had rights of use of the water

[79] *Peck* v. *Bailey*, 8 Haw. 658, 666 (1867).

[80] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 14 Haw. 50, 59 (1902), referring to *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651 (1895).

[81] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 686 (1904).

[82] *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 562-563 (1904); rehearing denied, 16 Haw. 52 (1904).

[83] *Kahookiekie* v. *Keanini*, 8 Haw. 310, 312 (1891).

flowing in the lower portion of the watercourse. Defendant dammed up the kalo patches and diverted part of the excess water through a flume to kula lands, claiming that this was part of the water that he was entitled to divert downstream. The court believed that even if defendant so diverted water into the flume only during the hours of his rightful use downstream, "it is not clear that it would not be an injury to those whose time for the use of water followed his—for the disuse of the lower auwais during his hours would tend to make them dry and absorb more water when it was again turned into them." Furthermore, it was not shown that defendant had entirely discontinued the use of water on any definite portion of his lower lands. The flume was ordered removed.

Diversion Out of Watershed

Transfers of water to new lands from the original place of use have involved, in several cases, transfers out of the original watershed.[84] This feature was not the subject of particular comment in any of the decisions; it was simply an incident to the transfer of place of use. The right to divert water out of the original watershed appears, then, to be tacitly recognized by the courts, subject of course to the qualification that there be no infringement upon the existing rights of others.

Change in Purpose of Use

"When a party has the right of water, he can use it for any purpose, although different from the original use," if the change does not injuriously affect the rights of others.[85] In that case the change was from kalo to cane irrigation. Changes in irrigated crops have been consistently upheld.[86]

The question of a change in the basic purpose of use—domestic, irrigation, development of power, etc.—has seldom been involved in supreme court decisions. In an early case[87] the water commissioners had adjudged that complainants were entitled to no more water than was necessary for their household purposes, because the ditch leading to their kula land had been built by the konohiki for no purposes other than household supply and replenishing a fish pond. This portion of the judgment was held to be erroneous. "We think that that should form no part of their judgment, because it makes no difference for what purpose the complainants acquired the right of water. They would be entitled to use whatever water they had acquired for any purpose they saw fit; * * *."

It was stated in the *Carter* case[88] that "It has been held that water appurtenant to land for household purposes may be put to a different use"; but such change was not in issue in that controversy. The statement was made in connection with the conclusion that a definite adjudication of the quantity or proportion of flow of water to which ancient rights were entitled, could not be made where the evidence failed to furnish a reasonably definite basis for making such determination. The court in that case (at p. 66) adopted the rule that the natural use of water for domestic purposes is a

[84] *Wong Leong* v. *Irwin*, 10 Haw. 265 (1896); *Foster* v. *Waiahole Water Co.*, 25 Haw. 726 (1921); *Territory of Hawaii* v. *Gay*, 31 Haw. 376 (1930).

[85] *Peck* v. *Bailey*, 8 Haw. 658, 666 (1867).

[86] See *Loo Chit Sam* v. *Wong Kim*, 5 Haw. 200 (1884); *Davis* v. *Afong*, 5 Haw. 216, 220, 224 (1884); *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 665 (1895); *Wong Leong* v. *Irwin*, 10 Haw. 265, 267-269 (1896); *Wailuku Sugar Co.* v. *Hale*, 11 Haw. 475, 476-477 (1898); *Palolo Land & Improvement Co.* v. *Wong Quai*, 15 Haw. 554, 560 (1904).

[87] *Kaalaea Mill Co.* v. *Steward*, 4 Haw. 415 (1881).

[88] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 69 (1917).

superior right to its use for artificial purposes, and stated that the ruling in the *Kaalaea Mill* case—to the effect that where land has a water right the owner may use the water for any purpose he sees fit—is not to the contrary; the question whether in case of diminished flow the right to water for artificial purposes would have to yield to the right for domestic use not being before the court in that case.

It appears, then, that the basic purpose of use under a water right may be changed if existing rights of others are not impaired by the change. Presumably, one who changed his use of an ancient right for domestic purposes to crop irrigation could not, in time of drought, exercise the preference accorded his domestic water right while being used for such "artificial" purpose.

Exchange of Water Supplies

It has been held that persons who own lands entitled to water on a certain day, under a rotation schedule, may consolidate or exchange their supplies of water with others, providing this does not injuriously affect third parties.[89]

Loss of Water Rights

Water rights may be lost by prescription, or by abandonment, or presumably by estoppel. Statutory forfeiture—that is, forfeiture of the right by reason of nonuse over a period of years prescribed by statute—which applies to appropriative water rights in most of the Western States, is not in effect in Hawaii.

Prescription

Water rights may be lost by prescription (adverse possession and use on the part of another for the statutory period of limitations), just as the title to land may be so lost. The legal effect of suffering another to possess one's land adversely for the statutory period of limitations is not only to bar the remedy of the owner of the paper title, but actually to divest his estate and to vest it in the party who has held adversely for the prescribed period of time; and the title thus vested in the adverse party is a title in fee simple, as perfect as a title by deed.[90] The same principle applies to prescription in relation to water titles.

The loss of a water right by reason of the adverse use of the water on the part of another for the prescriptive period, then, necessarily coincides with the acquisition of that right by the adverse party. The acquisition of prescriptive rights to the use of water has been treated in some detail heretofore in connection with the classification of established water rights (see p. 111 and following) and the principles need not be again discussed here.

Abandonment

> The alleged abandonment of an easement presents a question of intention and of fact, the burden of proof being upon the party making the allegation. * * *[91]

In an early case it was stated that there was no testimony as to whether, during a period when the water right was not being exercised, there had

[89] *Horner* v. *Kumuliilii*, 10 Haw. 174, 180-182 (1895).

[90] *Waianae Co.* v. *Kaiwilei*, 24 Haw. 1, 7 (1917), citing *Leialoha* v. *Wolter*, 21 Haw. 624, 630 (1913).

[91] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 55 (1917).

been an adverse enjoyment by others in consequence of the nonuse, against which it would be inequitable to enforce the old easement.[92] There was no reference to the fact that the right might have been abandoned, or to the relation of nonuse to abandonment. (See p. 86 above.) In a decision rendered several years later[93] it was inferentially recognized that the failure to use water for taro (kalo) land that had an ancient water right, pending the subsequent use of the land for rice growing under irrigation, did not vitiate the claim of that land to water for crop irrigation; there being no mention in the decision of the accrual of any intervening rights by prescription or otherwise, or of any intention to abandon the right.

Intent

The first actual adjudication of a claim of abandonment of water rights, in the Supreme Court of Hawaii, appears to have been in the Wailuku (Iao) Stream controversy,[94] in which it was contended that rights of certain ancient taro lands had been abandoned. The commissioner had found that some of the lands had been abandoned for cultivation and irrigation "under conditions suggesting that such abandonment is permanent," but declined to pass on the ultimate intention of the owner with respect to these lands. The supreme court stated:

> Whether or not the rights have been abandoned, is a question of intent. It does not necessarily follow from the discontinuance of irrigation of land to which water rights are appurtenant that the right to the water is abandoned. It may be and often is the fact that the discontinuance is merely for the purpose of using the water on other lands. If there is any one thing in this case that is entirely clear, it is that the respondent has never voluntarily surrendered any water rights. Upon the whole evidence we find that there has been no abandonment of the rights appurtenant to the 53 acres under consideration.

Nonuse

The commissioner in the *Carter* case[95] had concluded that by reason of long-continued nonuse, coupled with acquiescence by the petitioner in the erection of the Territory's dam and express renunciation of his claimed right to have the dam removed, the petitioner's rights to water for irrigation had been abandoned. The court held that mere nonuse of water, of however long duration, does not constitute an abandonment of the right, in the absence of a substituted use, or of intervening equities, or of adverse use. Furthermore, the court was not convinced that there had been a real nonuse of the right; the dams, and the main ditches across the land of the Territory, had been maintained and water diverted; and although the quantity diverted was less than formerly, so the natural flow of the stream was much less. It was believed, further, that the "failure to use what water has been diverted in recent years for irrigation, and that branch ditches situated wholly upon the land of the petitioner have become filled up or disused" did not show a nonuser of the right within the true meaning of the term. Failure to object to the erection of the Territory's dam was not regarded as an element of abandonment, as stated below in connection with estoppel; nor could the statement of the petitioner's willingness to have the dam remain, subject to such right as should be decreed to petitioner, be construed as a waiver or as evidence of an intention to abandon any irrigation rights.

[92] *Wailuku Sugar Co.* v. *Widemann*, 6 Haw. 185, 186 (1876).
[93] *Loo Chit Sam* v. *Wong Kim*, 5 Haw. 200, 201 (1884).
[94] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 691 (1904).
[95] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 54-57 (1917).

Reversion of Abandoned Rights

In the Wailuku (Iao) Stream case cited in footnote 94, a contention was made that the rights of ancient taro lands, claimed to have been abandoned, had reverted by operation of law to the konohiki. The claim of abandonment was not sustained; but had it been upheld, the reversion necessarily would have been to the konohiki, against whom the ancient rights had been established. The waters of privately-owned ahupuaas are in private—not public—ownership; hence in such case there would be no question of reversion to the public.

In the *Carter* case the commissioner had held that the individual respondents, as well as the petitioner, had abandoned their rights to water for irrigation purposes (at p. 52). As these individual respondents had not appealed, the court did not feel at liberty to review this ruling as to them, and consequently held that those rights must be regarded as having reverted to the Territory (at p. 68). Presumably the reversion to the Territory resulted from the adjudicated ownership by the Territory of all the waters of the ordinary or normal flow of the stream, subject to vested appurtenant rights.

Estoppel

Very few water-right cases involving questions of estoppel have reached the supreme court; and it does not appear that any actual losses of water rights by estoppel have been held to have taken place. However, as on the mainland, the principles and limitations of estoppel should be applicable to the assertion of claims of water rights as well as to claims of other forms of real property.

Acquiescence

The court in the *Carter* case,[96] in connection with its discussion of abandonment (see "Nonuse," above), stated that counsel for the Territory had not claimed that there was an estoppel. The court overruled the decision of the commissioner to the effect that long-continued nonuse of water by the petitioner, coupled with acquiescence in the building of the Territory's dam and renunciation of the right to have the dam removed, constituted an abandonment of petitioner's irrigation rights. Although the approach in this case was toward the question of abandonment, rather than estoppel (inasmuch as the commissioner had ruled that there had been an abandonment, and as the Territory had not claimed an estoppel), the discussion of acquiescence would have been pertinent in connection with a claim of estoppel, had one been made, and hence may well be reviewed at this point.

It appeared that the petitioner had notice that the Territory's dam was about to be constructed, or was in process of construction, and made no attempt to prevent its erection. However, the Territory had rights in that stream; hence the petitioner would not have been heard to complain of the erection of the dam until water had been diverted or until some use had been made that would actually interfere with his own rights in the water. The failure of the petitioner, then, to object to the erection of the dam, either of itself or in connection with the other circumstances, could not be regarded by the court as an abandonment. The fact that the property of

[96] *Carter* v. *Territory of Hawaii*, 24 Haw. 47, 54-57 (1917).

the petitioner was temporarily in the hands of a receiver at that time would not have excused his failure to move, had it been his duty otherwise to do so; for notice could have been given either through the receiver by permission of the court, or directly and without such permission, inasmuch as that could not have interfered with the duty of the receiver to conserve the property.

So far as estoppel is concerned, the law is well settled in Hawaii "and elsewhere that mere acquiescence, consisting of knowledge and silence, does not work an estoppel, unless, because of special circumstances, there is a duty to speak."[97] But the defense of estoppel has been sustained because of silence where "both the opportunity and *apparent* duty to speak" were present.[98] It would appear, under the circumstances of the *Carter* case, that the essential elements of estoppel were not present, and that properly, therefore, a claim of estoppel was not made.

Reliance Upon Representations

Reference has been made above (see p. 124) to a series of controversies[99] over the construction of a lease which involved the use of water from an artesian well. Questions of estoppel were considered in both opinions of the supreme court in the cases just cited, although not with respect to the loss of water rights.

The supreme court held, in the first of these decisions, that the lessor was liable to the lessees for the reasonable value of any water received under the lease in excess of the quantity required for the excepted buildings and grounds as they existed at the date of the lease, and refused to uphold the lessor's contention that a contract had been reached on the subject of rates for water for new buildings. It was held, furthermore, that the lessees were not estopped from claiming that no contract had been reached. Although the lessor had begun the construction of new buildings at about the time that negotiations were under way concerning the furnishing of water at a definite rate for the proposed buildings, the court found nothing in the evidence upon which to base a conclusion that the lessor had relied upon representations by the lessee or had been misled by them. Hence there could be no finding of an estoppel.

In the second case cited in footnote 99, it appeared that the plaintiff, after executing the lease of land and water to defendants, had leased certain nearby premises to a third party, Steere; and that in connection with that transaction, plaintiff had been instrumental in obtaining for Steere a lease of water from the defendants. The court held, as stated heretofore (see p. 124), that the defendants were required to furnish water for the excepted buildings by first pumping into an elevated tank, instead of merely permitting the plaintiff lessor to take the water as it stood in the well; and in so holding, the court stated that the plaintiff was not estopped to make her claim in this respect by the part she had taken in obtaining the execution of the lease of water from defendants to Steere. That lease had reserved, among other things, the right to pump water from the well; and this reserved right to pump, the court stated, protected the interests of the plaintiff.

[97] *Nahaolelua* v. *Kaaahu*, 10 Haw. 18, 21 (1895).
[98] *Peabody* v. *Damon*, 16 Haw. 447, 456 (1905).
[99] *Richards* v. *Ontai*, 19 Haw. 451, 460-461 (1909); *Richards* v. *Ontai*, 20 Haw. 335, 342 (1910; submission upon agreed facts).

Chapter 5

GROUND-WATER RIGHTS

Classification of Ground Waters

The "ground waters" discussed in this chapter comprise all waters in the ground that are or may be made available for use.[1] Very few decisions of the Supreme Court of Hawaii have dealt with rights to the use of ground waters, notwithstanding the fact that such waters have become of great importance in the economy of the Territory, in which the use of well water has increased rapidly in recent years, and in which large supplies of ground water still await development (see pp. 9-10).

The few court decisions have treated separately ground waters (1) flowing in defined streams, (2) not in defined streams, and (3) under artesian pressure. That is, rights to the use of ground waters of these first two classes have been considered by the court to be not the same, although the governing principles have not been well established. And in the one decision in which rights in artesian waters were discussed at length, the court did not regard previous ground-water cases in Hawaii as authority on the subject of artesian waters.

It is necessary, in analyzing rights to the use of ground waters, to consider the extant court decisions in relation to any physical classifications of water that are made or suggested in the decisions as bearing upon rights of use, whether or not those classifications have recognized scientific support. The distinctions between "definite underground streams" and "percolating waters," such as those that prevailed at the common law and in numerous court decisions in the Western States, as well as in legal texts, are now considered by competent ground-water hydrologists as being at variance with the physical laws that govern the occurrence and recovery of ground water; the explanation being that scientific facts and observations now available were not then known, or that certain natural laws and observed hydrologic conditions were incorrectly interpreted.[2] The concept of these scientists appears to be that practically all water that is moving through the interstices of the earth is "percolating" ground water, according to dictionary definitions of the term "percolating"; that such water is moving toward the sea, or toward some stream perhaps a considerable distance away, the flow of which it is helping to maintain; and that "Accordingly, with reason

[1] Some subsurface water is not susceptible of practicable use, but it is only waters to which rights of use can be made to attach that are considered in this study. As to the classification of subsurface waters generally, see Meinzer, O. E., "Outline of Ground-water Hydrology," U. S. Geol. Survey Water-Supply Paper No. 494 (1923).

[2] See, particularly, Thompson, David G., discussion of Harold Conkling's paper on "Administrative Control of Underground Water: Physical and Legal Aspects," Trans. Amer. Soc. Civ. Eng., vol. 102 (1937), p. 753, at pp. 798-819; Thompson, David G., and Fiedler, Albert G., "Some Problems Relating to Legal Control of Use of Ground Waters," Jour. Amer. Water Works Assn., vol. 30, No. 7 (July 1938), pp. 1049-1091, particularly pp. 1055-1061; Smith, G. E. P., "Groundwater Law in Arizona and Neighboring States," Ariz. Agr. Expt. Sta. Tech. Bul. 65 (1936); Tolman, C. F., and Stipp, Amy C., "Analysis of Legal Concepts of Subflow and Percolating Waters," Trans. Amer. Soc. Civ. Eng., vol. 106 (1941), pp. 882-933 (with discussions by others, some of which referred with approval to the original paper and others took issue with certain statements of the authors, particularly some of the statements that referred to court decisions).

it may be considered to be flowing in a definite water course or channel whose boundaries are the boundaries of the water-bearing formation even though the 'water channel' thus defined in some instances may be many miles wide."[3] The authors just quoted expressed the belief that from a scientific standpoint, an elaborate classification of ground water—such as "subterranean watercourses or streams," "artesian waters," and "percolating waters," with further subdivisions of the general class of percolating waters—is neither justified nor necessary; that "All water in the part of the earth known as the zone of saturation is purely and simply ground water, moving according to certain well recognized laws of physics."[4]

The present writer accepts the concept of these hydrologic authorities—who are outstanding in their field—that broad legal distinctions between definite underground streams and percolating waters are not well founded—except, of course, upon the rule of precedent. It is also believed that attempts to apply such distinctions in so many litigated cases on the mainland have led to much confusion in the matter of ground-water rights and have retarded development of effective legal control of ground waters for beneficial uses; and that the desirable policy is to consider all subterranean water that is susceptible of practical use as simply "ground water," and to coordinate rights to the use of all interconnected water supplies, whether upon or under the surface of the earth or both. Notwithstanding this conviction, a study of ground-water law, either on the mainland or in Hawaii, must necessarily take account of extant judicial classifications, whether they are scientifically well grounded or not; otherwise the statement of existing law is incomplete. Hence the discussion of Hawaiian decisions in this chapter is arranged according to the classification toward which the supreme court has apparently leaned.

Occurrences of Ground Water in Hawaii

It is desirable, before proceeding with the discussion of ground-water cases, to outline the occurrences of ground water in the Islands and the physical relationships between bodies of ground water.[5] These physical relationships will be important in any litigation between claimants to the use of water from different sources which may be shown by evidence to be interconnected sources of water supply.

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[3] Thompson and Fiedler, op. cit., p. 1060.

[4] Thompson and Fiedler, op. cit., p. 1061.

[5] A recent series of bulletins published by the Territory of Hawaii, Department of Public Lands, Division of Hydrography, in cooperation with the United States Geological Survey, treats the subject of ground waters of several of the islands in detail: Stearns, Harold T., and Vaksvik, Knute N., "Geology and Ground-water Resources of the Island of Oahu, Hawaii," Bul. 1, 479 pp. (1935); Stearns, Harold T., and Vaksvik, Knute N., "Records of the Drilled Wells on the Island of Oahu, Hawaii," Bul. 4, 213 pp. (1938); Stearns, Harold T., "Supplement to the Geology and Ground-water Resources of the Island of Oahu, Hawaii," with chapters by Joel H. Swartz and Gordon A. Macdonald, Bul. 5, 164 pp. (1940); Stearns, Harold T., "Geology and Ground-water Resources of the Islands of Lanai and Kahoolawe, Hawaii," with chapters by Gordon A. Macdonald and Joel H. Swartz, Bul. 6, 177 pp. (1940); Stearns, Harold T., and Macdonald, Gordon A., "Geology and Ground-water Resources of the Island of Maui, Hawaii," Bul. 7, 344 pp. (1942); Stearns, Harold T., and Macdonald, Gordon A., "Geology and Ground-water Resources of the Island of Hawaii," Bul. 9, 363 pp. (1946). See also, in the same series, Stearns, Harold T., "Geologic Map and Guide of the Island of Oahu, Hawaii," Bul. 2, 75 pp. (1939); Stearns, Norah D., "Annotated Bibliography and Index of Geology and Water Supply of the Island of Oahu, Hawaii," Bul. 3, 74 pp. (1935); Stearns, Harold T., "Geology of the Hawaiian Islands," Bul. 8, 106 pp. (1946).

The bibliography in Bulletin 3, above, contains annotations of many writings which bear upon the subject here under discussion. For the purposes of this very brief sketch, extensive references are not deemed necessary.

All occurrences of ground water in the Hawaiian Islands have been grouped by Stearns (see ch. 2, p. 9) into (1) basal water and (2) high-level water. Basal water consists of the great body of fresh water which lies below the main water table and which floats on salt water. High-level water comprises bodies of ground water held up above this main water table.

Origin and Source of Ground Water

The physical conditions that influence the occurrence of ground water in Hawaii differ in many important respects from those that prevail on the mainland. In order to arrive at an understanding of these conditions, it is desirable to consider the probable manner in which they have been brought about in a volcanic oceanic island such as one of those in the Hawaiian group. This can best be done, it is believed, by presenting, in fairly non-technical language, a hypothesis of the manner in which ground water would originate in an ideal, simple island formed by volcanic action in the ocean, and by following this with a statement of some of the more important factors that are known to have complicated the situation which actually prevails.[6]

Assumed Ground-water Conditions In an Ideal Volcanic, Oceanic Island

Ground water, to be available for ordinary use, is necessarily fresh water; and on any island in the Hawaiian archipelago the fresh water apparently can come from no source other than precipitation upon that island—not from precipitation upon some other land. This inference results from the geologic history of these islands, which are the tops of volcanic masses that rose above the sea (see pp. 4-6, ch. 2); the presumption being that the salt water of the ocean originally saturated the permeable rocks below sea level to which it could gain access.

If such a volcanic island, formed in the manner in which those of Hawaii are thought to have been formed, had consisted entirely of highly permeable rock, it is supposed that the zone of rock saturated with salt water from the ocean would have extended entirely through and across the island. Had there been no rainfall, and hence no fresh water, the height of the water table would have become stabilized at approximately sea level.[7] But there was rainfall; and as the island emerged from the sea, a part of the precipitation upon it percolated into and down through the accessible pore spaces

[6] For information used in the preparation of this statement, concerning the origin of ground water in the Hawaiian Islands, the present writer is particularly indebted to Dr. Harold S. Palmer, Professor of Geology of the University of Hawaii, and has placed chief reliance upon Dr. Palmer's report entitled "The Geology of the Honolulu Artesian System," published as a Supplement to the Report of the Honolulu Sewer and Water Commission, 1927. In addition, valuable interviews were had with Max H. Carson, W. O. Clark, Simes T. Hoyt, John McCombs, Frederick Ohrt, Harold S. Palmer, Walter H. Samson, Harold T. Stearns and Chester K. Wentworth, all of whom have devoted much study to ground-water conditions in the Islands. Further acknowledgment in connection with Honolulu artesian conditions is made in the discussion of the coastal artesian areas of Oahu, p. 162, below.

[7] The term "water table" applies to the upper surface of a zone of saturation in the earth, that is, to the boundary between a "saturated zone" in which the voids in the ground are filled with water and an "aerated zone" in which the voids are not filled with water. In an aerated zone the voids may contain some water that is percolating downward through them, but the air in the pore spaces has not been completely displaced by water. The saturated zone in the case of this imaginary rainless island would comprise all the rock below sea level, and the aerated zone all the rock above sea level.

in the permeable rocks above sea level and eventually reached the top of the zone saturated with salt water. There the fresh water, being lighter, was forced to spread laterally over the top of the salt water and to escape at the coast line into the sea. As the island grew higher and wider, the lateral movement of the fresh water was retarded more and more by the increasing friction in the pore spaces of the rock, but it continued; and in the meantime accretions were being received from the downward percolating rain water. The result was the building up of a body of fresh water in the ground, in the form of a dome, in contact with the body of salt water that saturated the permeable rock below sea level and arching well above it. The dome extended laterally in all directions to the sea, and the excess fresh water continued to escape into the ocean through shore-line springs.

The fresh water and salt water did not mix, except in a limited "zone of diffusion" along the line of contact.[8] On the contrary, the main body of fresh water rested upon the salt water below—"floated" upon it, because the salt water was about one-fortieth denser than the fresh water. The weight of the fresh water tended to force the underlying salt water downward and outward. A portion of the salt water was thus displaced by fresh water, but as the salt water had the greater density, or higher specific gravity, it could not be completely displaced to the point at which the space it formerly occupied would be wholly filled by fresh water. Hence part of the fresh water stood above sea level, and the balance occupied the space below sea level formerly occupied by the displaced salt water. The amount of downward thrust, and the resulting displacement of salt water, were governed by the relative densities of the two kinds of water; that is, the body of fresh water extended below sea level approximately 40 feet for each foot of the height at which it stood above sea level.[9]

Thus within the permeable rock of the island there was a zone saturated with fresh water lying immediately above and in contact with the zone saturated with salt water; and the water table of the island was the upper surface of the fresh-saturated zone, and not the top of the salt-saturated zone that would have stood at sea level in the case of a rainless island. The water table sloped from the central portion of the island toward the seashore, for the heaviest rainfall was on the high mountain elevations in the central area and it was there that the fresh-saturated zone received its greatest accretions from the downward percolation of rain water and that the dome of fresh water consequently attained its highest elevation.

[8] This was owing to several causes, an important one being the continual recharge of fresh water from precipitation. Within the zone of diffusion the saltiness of the water varied, but was less than that of sea water. "At the upper limit of this zone the salt content is only slightly greater than that of normal fresh water, but it increases progressively with depth until at the lower limit it is equal to that of sea water." McCombs, John, "Methods of Exploring and Repairing Leaky Artesian Wells on the Island of Oahu, Hawaii," U. S. Geol. Survey Water-Supply Paper 596-A, p. 10.

[9] The mean specific gravity of sea water near Hawaii, referred at 22 deg. C. to artesian water at the same temperature, has been determined as 1.0261: Wentworth, Chester K., "The Specific Gravity of Sea Water and the Ghyben-Herzberg Ratio at Honolulu," Univ. Hawaii Bulletin, Vol. 18, No. 8 (June 1939), p. 24. Using this factor as the density of sea water, the calculated depth to which the salt water was forced below sea level by the fresh water (according to what is known as the Ghyben-Herzberg principle) was 38.3 times the height at which the fresh water stood above sea level. Other factors make this value approximate only, and the 40 to 1 ratio is the one in common use. But because of diffusion and mixing of fresh and salt water, the actual depth of fresh water below sea level in the Ghyben-Herzberg lens of Oahu is less than the theoretical depth: Stearns, Harold T., op. cit., Bul. 1, p. 238. Dr. Wentworth (op. cit., p. 24) suggests the value 38 as the whole number giving least error, and safer than 40, when used in connection with the estimated depth of the zone of transition between fresh and salt water in the Honolulu wells.

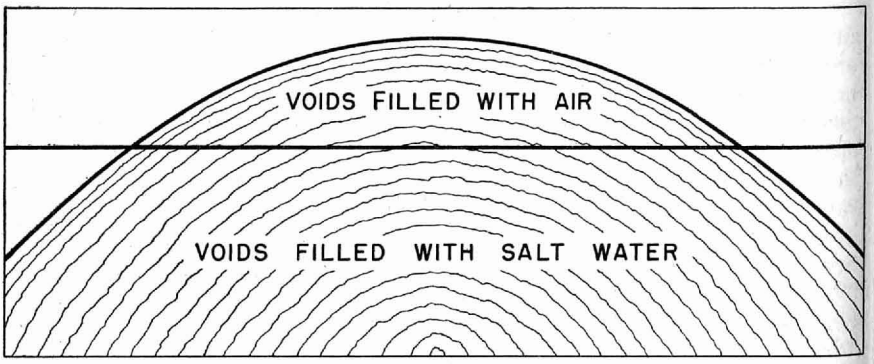

Figure 1(a). A volcanic island consisting of highly permeable rock, with that portion below sea level saturated with salt water from the ocean.

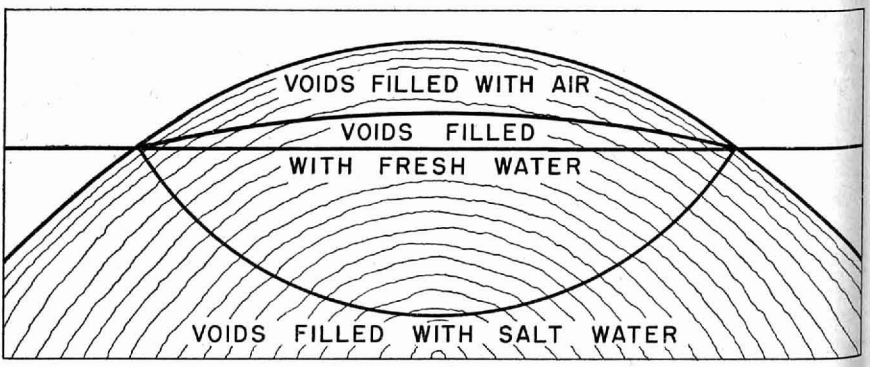

Figure 1(b). Percolating rainfall in its downward and lateral travel builds up a body of fresh water floating in the salt water with part above sea level balancing an inverted dome of fresh water below sea level with the volume governed by the relative densities of the two kinds of water.

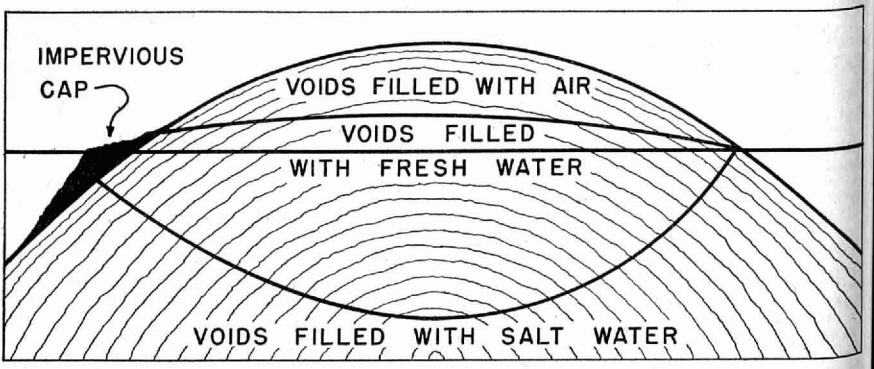

Figure 1(c). Island modified by an impervious cap restricting lateral movement in one direction and formation of an artesian condition.

It follows that if such an ideal island were roughly circular and if its structure were uniformly permeable, the shape of the body of fresh ground water resulting from precipitation would conform to that of a great double-convex lens. The sharply tapering circumference of the lens would be at the seashore. The top surface of the lens, or water table, would curve upward from the seashore toward the center of the island, and its lower surface would curve more sharply downward toward the center. The lens would rest upon the concave upper surface of the underlying body of salt water, the boundary between fresh and salt water being not sharp, but constituting a transition zone from fresh to salt water. The height of the upper surface of the lens above sea level would be, in all places, directly proportional to the depth of its lower surface below sea level, in a ratio of about 1 to 40. Expressed differently, the lens would bulge downward about 40 times as far below sea level as it would arch upward above sea level. The precipitation upon the island not lost by evaporation or transpiration or surface runoff, would tend to become concentrated in this lens, or body of "basal" fresh water.

Cross-section of the Ideal Island

Thus, in the over-all concept of ground water in this imaginary simple island, a cross-section of the island would comprise (1) a bottom section of rock entirely below sea level, having a concave upper surface with its edges at the seashore, the rock being saturated with salt water from the ocean and in contact with the ocean water; (2) an intermediate section in the shape of a double-convex lens, lying partly above but mostly below sea level and with its edges at the seashore, saturated with fresh water in contact with the salt water that saturates the rock in the bottom section, the contact area being a belt or zone of diffusion of fresh and salt water; and (3) an upper section of rock constituting an aerated zone, in which part of the water that is intermittently precipitated upon the island percolates downward to join the body of fresh water occupying the intermediate lens-shaped section, but without filling the voids in the rock of this upper zone through which it descends. (See figure 1.)

Factors that Complicate the Ideal Situation

The foregoing concept is helpful in arriving at a reasonably intelligent understanding of the peculiar ground-water conditions that prevail in the Islands. However, it requires qualification, because, owing to several important factors, the ideal conditions thus assumed do not fully obtain. Considered in connection with the more important complicating factors, however, the concept appears to afford a logical and understandable explanation of the origin of ground water in the Hawaiian Islands.

Among the factors that complicate the ideal situation are original variations and subsequent changes in the shape and composition of the basic structure of a volcanic island; changes that have taken place in the surface material or in material that formerly was on the surface; and lack of uniformity in the distribution of rainfall. More specifically, there were repeated flows of lava, and there were variations in rock composition and in lava-flow structure, with resulting variations in permeability of the great body of rock. Likewise, the generally permeable volcanic masses in places are

interspersed with "dikes,"[10] which are barriers or obstacles to the movement of the water that saturates the more permeable rock adjacent to them, and which have resulted in the creation of separate reservoirs of high-level ground water on what might be termed "islands" in the main lens of basal ground water. The dikes are natural dams, even though not absolutely water-tight; and thus they are effective in holding up large quantities of ground water collected behind them. Still other bodies of relatively impervious rock serve to obstruct the flow of ground water. Likewise, a modification of the ideal situation that is of outstanding importance on Oahu, and which is found also on Kauai, is the existence of bodies of relatively impervious material in some places along the seashore, called "caprock," which serve to alter the tapering edge of the lens of basal water and to create artesian conditions. This is discussed more fully below (see p. 154 and following). The result of these and other factors is that while the "lens" of water exists, it is not symmetrical in configuration, and the occurrences of ground water throughout the island necessarily are not uniform.

Sources of Ground Water

The ultimate source of fresh ground water, then, is precipitation upon the island, which likewise is the ultimate source of surface water. The exposed portions of the original volcanic formation, particularly in the high mountain elevations where the rainfall is heaviest, act as the intake area of the main ground-water system of the island. Before sinking into the ground, however, the rain water may flow over the surface for considerable distances in the form of diffused flows or of definite watercourses, or both. Surface flows with either definite or indefinite boundaries (and which in turn may be fed in part from subterranean sources) are thus intermediate sources of supply of ground water. Another intermediate source is return water from irrigation—the portion of the water applied to soil that sinks below the feeding zone of the plant roots—and which in turn may have been diverted for irrigation purposes from either surface or underground sources.

Basal Water[11]

Basal water is the great body of water that lies below the main water table or upper zone of saturation of the island, in contact with the underlying salt-water table. This is characteristic of the large islands in the Hawaiian archipelago. Generally speaking, basal water occurs under the island except in the rift zones in the basalt, which it surrounds. That is, the effect of the dike complexes associated with the rift zones would be (and in many places is) to establish an "island" or "islands" in the pre-

[10] The term "dike" as used in this connection refers to a fairly vertical, straight, narrow intrusion of lava in older lava rocks or soils, formed from the cooling of magma that rose through a crack in the older rocks. The dikes are only a few feet in thickness (those of as much as 10 feet being rare), but some of them extend longitudinally for considerable distances, such as a mile or more. The dike is usually more compact than the extrusive rock, hence its function as a barrier to the movement of water. See Stearns, H. T., op. cit., Bul. 1, p. 20. On page 380 of the cited bulletin it is stated that "Dikes are not sufficiently impermeable to prevent some percolation through them."

[11] The statements in this section and in the following section on high-level water are based principally upon the extensive discussions of basal ground water and perched ground water by Harold T. Stearns, op. cit., Bul. 1, pp. 215-443; Bul. 5, pp. 3-55; Bul. 6, pp. 74-95; and Bul. 7, pp. 116-146 and 188-202.

vailing body of basal water and to make possible thereby the formation of natural reservoirs of high-level water.

The basal water of Oahu is divided into (1) shallow water, usually without confining beds, occurring in such permeable rock masses as occur in the coastal plain, and (2) water occurring in the Koolau and Waianae basalts, with or without confining beds. (Similar divisions between deep and shallow basal water obtain on the other large islands.) The greatest underground reservoir on Oahu is in the Koolau basalt; and it is of outstanding importance in the economy of the island. In contrast with the basalts, the rocks of the shallow-water areas yield small supplies of water; but in places substantial quantities have been recovered, and in many other places these sources are actually or potentially important for domestic or irrigation or industrial purposes.[12] The water of some of these shallow-water areas of Oahu occurs in the caprock structure, which in turn overlies bodies of artesian water confined in the basalt.

While the basal water table slopes toward the seashore, the gradient is relatively flat, thus indicating that the rocks are exceedingly permeable. Such flat gradients are characteristic of the basal water tables of Oahu and of the other large islands. Average gradients of about 1.5 feet per mile have been observed at places on Oahu and Lanai, and 1.8 on Maui, although in some places the gradient reaches 2.5 to 3 feet to the mile.

Basal Artesian Water

In portions of the coastal plains of Oahu and Kauai, water in the basalt under a relatively impermeable "caprock" is under artesian pressure, being thus confined between the caprock and the underlying salt water. (See more detailed discussion below, pp. 154-163.) These coastal artesian areas are supplied from the water in the much more extensive nonartesian portions of the basalt inland from them. In such situation the artesian and nonartesian waters, being in direct contact, comprise a continuous, common body of ground water, even though their hydrostatic properties are not the same. This physical relationship is important as affecting rights to the use of these connected water supplies, as shown hereinafter (see pp. 156, 165, and 198).

High-level Water[13]

The occurrences of high-level water in the Hawaiian Islands consist mainly of water (1) confined by intrusive rocks, chiefly dike complexes, (2) perched on ash or tuff beds, (3) perched on soil beds, and (4) perched on alluvium. The term "perched" is used with reference to water that rests upon a relatively impervious body, which in turn rests upon an aerated zone. All four of these types of high-level water occur on Oahu and Maui, but on Lanai only the first and third types are known to exist. On East Maui there is evidence that water is perched on dense lava sheets.

[12] Shallow nonpotable ground water has been developed to some extent in Honolulu by private users for air conditioning and other industrial purposes, and studies are being made to determine whether a considerable volume of the present artesian-water requirements for which potable water is not essential can be shifted to this nonpotable source: Board of Water Supply, City and County of Honolulu, Eighth Biennial Report, 1939-1940, pp. 39-40.

[13] See footnote 11.

Water Confined by Dikes

The largest known bodies of high-level water on Oahu are those confined in the dike complexes associated with the rift zones. (See figure 2.) The water resulting from precipitation on the high elevations that enters and saturates the permeable rock within the dike complexes is held up by relatively impermeable barriers, chiefly dikes. Hence the tops of the saturated zones represent water tables, the heights of which vary from place to place according to the confining rock structures, and also vary from time to time with the recharge (incoming precipitation and accretions from other dike reservoirs) and with the quantities of water that escape. The water tables in many places stand at heights of hundreds of feet above sea level; and while, owing to inaccessibility, the conditions that exist at the bases of the dike complexes are not known with certainty, it is apparent that in certain places the permeable rocks within the dike complexes are saturated to great depths.[14] It is considered likely that dikes may be so abundant at the bases of some complexes as to replace all permeable extrusive lavas and to form reservoir floors practically impervious to water. Sills (horizontal offsets from dikes) are small and few, and so far as known, they serve to hold up water in a few places only.

These dike complexes, then, act as natural reservoirs, part of the impounded water being held in storage and part being allowed to escape. According to Stearns,[15] the water that enters this vertical zone of saturation is disposed of in several ways—a large part overflows as springs on the surface; some reaches the sea by flowing at the base of the alluvium; and the remainder leaks through joint cracks in the dikes along the margin of the rift zone and joins the basal zone of saturation of the island. The dike material itself, while relatively impermeable in the usual case in comparison with the adjacent extrusive rock, is not so absolutely water-tight as to preclude all percolation through it. Large quantities of water have been diverted from the dike complexes by means of tunnels driven into them.

Water confined by dikes and not floating on salt water has been found on Hawaii, Lanai, Maui, and Molokai, as well as on Oahu.

Perched-water Supplies

Of the high-level water supplies of Oahu, the second largest group appears to be in perennial stream valleys where older alluvium has been covered by later lava flows.

The Hawaiian alluvium is relatively impervious. In many other regions, alluvium consists largely of quartz, which is resistant to weathering and to loss of permeability. But in Hawaii the constituent grains are of basaltic debris, which weathers and rots rather readily; and the weight of the later overlying lava flows tends to compress the weathered materials and thus to reduce greatly their porosity and permeability. The result is that the older alluvium buried in the perennial stream valleys of the Islands is characteristically less permeable than the overlying lava rock. In some areas

[14] In diagrammatic sketches of cross-sections by Stearns, H. T., op. cit., Bul. 1, p. 65, and Bul. 6, p. 24, dike complexes, saturated with fresh water, are shown as extending not only below sea level but below the salt-water table underlying the basal water. It is stated, however, in Bul. 1, p. 379, that the vertical zone of saturation along the Pali, in the Koolau Range of Oahu, extends downward probably well below sea level, but that near the heart of the dike complex the bottom of the zone of saturation is apparently in places above sea level.

[15] Stearns, H. T., op. cit., Bul. 1, p. 380.

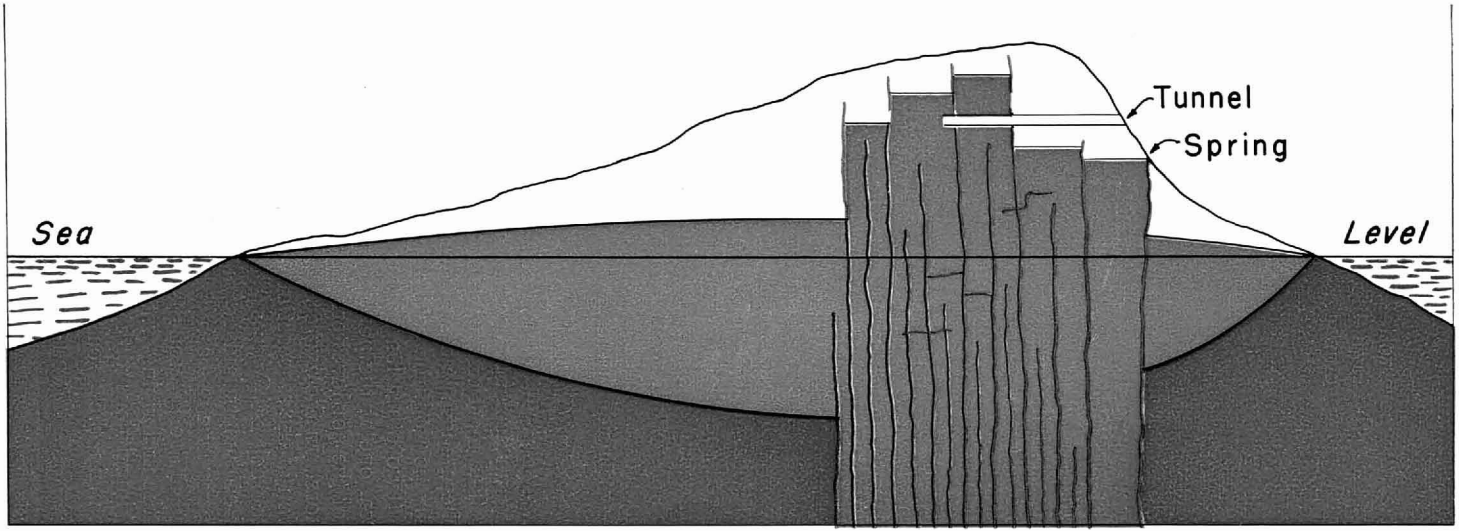

Figure 2. Occurrence of high level ground water held up by dikes, which are shown by red lines. The water occurs in pervious flow lavas. The fresh water is shown in blue and the salt water in green.

the alluvium is not everywhere rotted, and where this is the case, water is allowed to percolate through the unfilled interstices. In other areas, on the contrary, the alluvium is so compacted as to be almost impermeable and thus to provide an effective base for the perching of water upon it.

Other supplies of ground water are perched upon ash and soil beds interstratified with lava flows.

High-level Artesian Water

Artesian water, underlain by dense intrusive rock and capped with impermeable sediments, has been found on Oahu in the dike complex of the Koolau range at Waimanalo and in the Waianae range at Makaha.

On the Island of Maui a perched aquifer containing water under an artesian head was discovered in 1941. The water is confined under pressure in permeable basalt lying between dense lava flows. This occurrence of artesian water is of a type previously unknown in the Hawaiian Islands.

The Coastal Artesian Areas of Oahu

The outline of the origin of ground water given above (see p. 146 and following) indicates the view of ground-water hydrologists that the main body of fresh basal water of Oahu, and of other comparable islands, conforms generally to the shape of a double-convex lens—a lens resting upon the underlying salt water, arching above sea level, extending to distances below sea level about 40 times greater than the elevation of the arch above sea level, and tapering at the seashore. It is also stated there that along some portions of the seashore of two of the islands, overlying structures of "caprock" have altered the sharply tapering edge of the lens, and that in such places artesian conditions have been created. (See figures 1(c), 3, 4, and 5.) This is the case with respect to portions of the coastal plains of both Oahu and Kauai (see p. 151). It is only the situation on the Island of Oahu that is being considered here.

Character and Functions of Caprock

Bodies of relatively impervious caprock—some of considerable extent—rest upon the sloping surface of the pervious rocks along several portions of the Oahu seacoast. The most extensive of these areas lies along the major portion of the southern shore line southwest of the Koolau Range and includes, in its easterly portion, the coastal plain upon which a large part of Honolulu is built. Two other long areas are mapped directly across the island from this area, one at the northernmost extension of the island and the other just east of the northwestern tip; and two very small areas lie on the northeastern shore. In the aggregate, these areas of caprock constitute a considerable portion of the seacoast of Oahu.[16]

The bodies of caprock on Oahu are far from homogeneous, but consist mostly of layers of sediments laid down upon the older lava flows. They include coral and young lava and ash, and their parts vary greatly in permeability; but the mud and clay portions are the most abundant and are far more compact than the underlying water-bearing basalt, and the structure as a whole is relatively impervious to the percolation of water through it.[17] The result is that, in the main, these rock bodies provide effective barriers to the

[16] See maps of ground-water areas on Oahu, Stearns, H. T., op. cit., Bul. 1, p. 236, and Bul. 5, plate 2.

[17] Palmer, H. S., op. cit., pp. 35-39; Stearns, H. T., op. cit., Bul. 1, pp. 250-252.

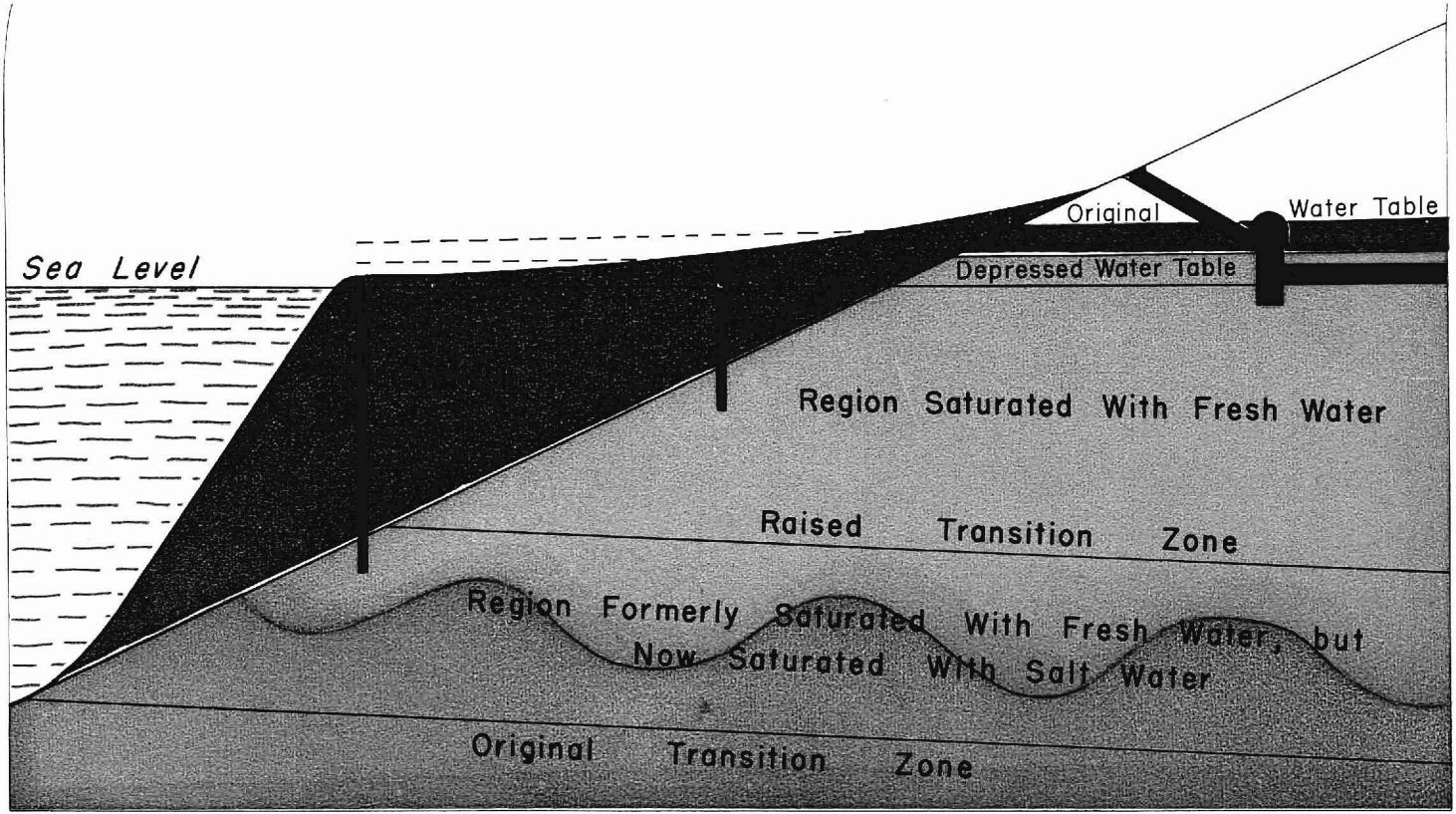

Figure 3. How excessive withdrawal of water has lowered the water table and piezometric surface; raised the transition zone between fresh and salt water; changed some wells from flowing wells to wells that have to be pumped; and made some wells go salty. The modern method of obtaining water by skimming the upper water surface is illustrated by the inclined shaft and development tunnel. Purple shading shows the region drained of water.

flow of the basal water that saturates the highly permeable basaltic rocks upon which they are superimposed. They extend from varying distances back from the seashore to considerable distances into the ocean, and they rise to moderate elevations above sea level and descend generally to much greater depths below sea level. In other words, they blanket large portions of the coast as it would have existed if the island had consisted entirely of permeable rock. Thus they are essentially sloping walls against which the tapering edge of the lens of basal water rests.

The water in the lens tends to move outward and to escape into the ocean at the tapering edge, because of continual accretions from rainfall and the natural tendency of the lens-dome to flatten, but the sloping wall of caprock acts as a seaward barrier to the escape of the water. Hence the ground water at the edge of the lens is forced by this wall both upward and downward, and so the edge of the lens is blunted. The top of the blunted edge is forced above sea level about 1 foot for each 40 feet of the distance to which the lower point of the blunted edge is forced below sea level. As the caprock is a sloping wall, it provides an upper confining barrier as well as a seaward barrier to the movement of the fresh water, and the underlying salt water acts as the lower confining barrier. Hence the effect of the caprock is to trap water that percolates into the permeable rock beneath it from the rock in the central portion of the island. The trap is not everywhere perfect, for some of the water that reaches the caprock is deflected and some escapes through weak places in the structure, but it withholds large quantities of water under pressure.

Creation of Artesian Conditions

Pressure is exerted by the water that saturates the contiguous permeable rock inland from the caprock, and that forces or presses the confined water against the sloping wall.[18] The water-bearing basalt or aquifer that underlies the caprock and that extends inland from it constitutes one underground reservoir.[19] The water in the different portions of this common underground reservoir is seeking to find a common level. The portion of the reservoir that lies inland from the caprock is not confined by an overlying impervious stratum, but has what is called a "free" water table; hence if a well is driven into that portion of the water-bearing stratum, the water will not rise naturally in the well above the free water table, because there is no natural pressure (artesian head) that would force the water higher inside the well than outside of it. But the free water table encounters the caprock along a line inland from and running in the same general direction as the line of the seacoast;[20] and from that inland line seaward the upper level of the ground

[18] The effect of caprock upon actual water levels is graphically portrayed by diagrams in Palmer, H. S., op. cit., pp. 41-42, and Stearns, H. T., op. cit., Bul. 1, plate 25B, and Bul. 5, p. 7. The same concept, with particular reference to recharge of the artesian structure from a proposed infiltration tunnel, is shown by a schematic diagram in Board of Water Supply, City and County of Honolulu, Eighth Biennial Report, 1939-1940, p. 45.

[19] See Stearns, H. T., op. cit., Bul. 1, p. 250. This fact has important legal significance, as emphasized elsewhere in this chapter (see, particularly, pp. 151, 165, and 198). The water of the inland (nonartesian) and caprock (artesian) portions of the reservoir are separated only by an imaginary boundary extending downward from the line of contact between the free water table and the caprock. The hydrostatic properties of the two portions are not the same, but they nevertheless constitute one continuous body of ground water.

[20] While the major portion of the inland or mauka boundary of the caprock runs in the same general direction as the seacoast, it is not parallel to the shoreline. Part of a given caprock area is land contiguous to the shore and part is submerged by the sea. The land area is thus bounded by the shore and by an inland line which has both ends at the shore and which swings inland in an irregular way to varying distances from the shore.

water is depressed, because of the impervious character of the caprock, below the height at which it would stand if the caprock were pervious. Hence at all places seaward from that line the water actually is forced to stand below the level of the free water table inland from it, and hence is under hydrostatic pressure transmitted from the free water table. If a well is driven through the caprock and into the common water-bearing stratum at a point seaward from that line, the water will rise naturally in that well above the level at which the well enters the water-bearing stratum; that is, the water will rise in this artificial opening above the level to which it has been depressed by the caprock. Such water is called "artesian" water and such a well is an artesian well. The upper level, or highest point, to which the water will rise naturally in such an artesian well is called the "piezometric surface."[21]

The result of the pressure upon these bodies of confined water, exerted by the inland body of basal water that supplies them, is to cause water to escape from the confined strata through all available avenues. Water may escape naturally through overflow springs at the top of the caprock, by leakage through the caprock, and presumably through submarine springs at the base of the caprock. Water may also be induced to escape from the artesian structure by artificial means, that is, by improvement of natural springs on the surface but principally by wells.

Artesian Wells

Where the piezometric surface is above the surface of the ground, as it is in many places along the seashore, the water of a well drilled into the water-bearing stratum will flow upon the surface of the ground, for the pressure tends to force the water to the piezometric surface. Where the piezometric surface is below the surface of the ground, as is the case within a zone extending part of the distance seaward from the line of contact between the free water table and the caprock, the water will not flow from a well driven into the aquifer, because it cannot rise naturally in the bore hole above the piezometric surface. Such a well is an artesian well, even though it does not flow upon the surface, for it contains artesian water that rises in the bore hole to the piezometric surface, from where it must be raised to the ground surface by pumping. Such a well in use is known as a "pumped" artesian well, as distinguished from a "flowing" artesian well. (See figure 3.) And inland from the line of contact between free water table and caprock, a well may penetrate the same body of ground water of which the artesian water is a part, but the water of such a well is not under

[21] The piezometric surface therefore is a theoretical continuation of the water table through the caprock. However, the piezometric surface is higher than the water table would be if the caprock were permeable, and it not only extends through the caprock, but continues toward the ocean above the surface of the ground. This is because the piezometric surface is at the same level (less a reduction caused by friction if the water is in motion) as the level of the water at the line at which the free water table contacts the caprock; whereas the actual water table, if the caprock were permeable, would slope downward, through the caprock, from that contact line to the seashore.

In view of the ratio of height of the piezometric surface above sea level to depth of fresh water below sea level, commonly taken in Hawaii as 1 to 40, a drop in artesian head resulting from overdevelopment has more serious results than simply making it necessary to pump some artesian wells that formerly flowed upon the surface. It means that a permanent loss of 1 foot in head will be accompanied by a rise of the salt water of about 40 feet. This phenomenon in the Honolulu area is discussed by McCombs, John, op. cit., pp. 6-11.

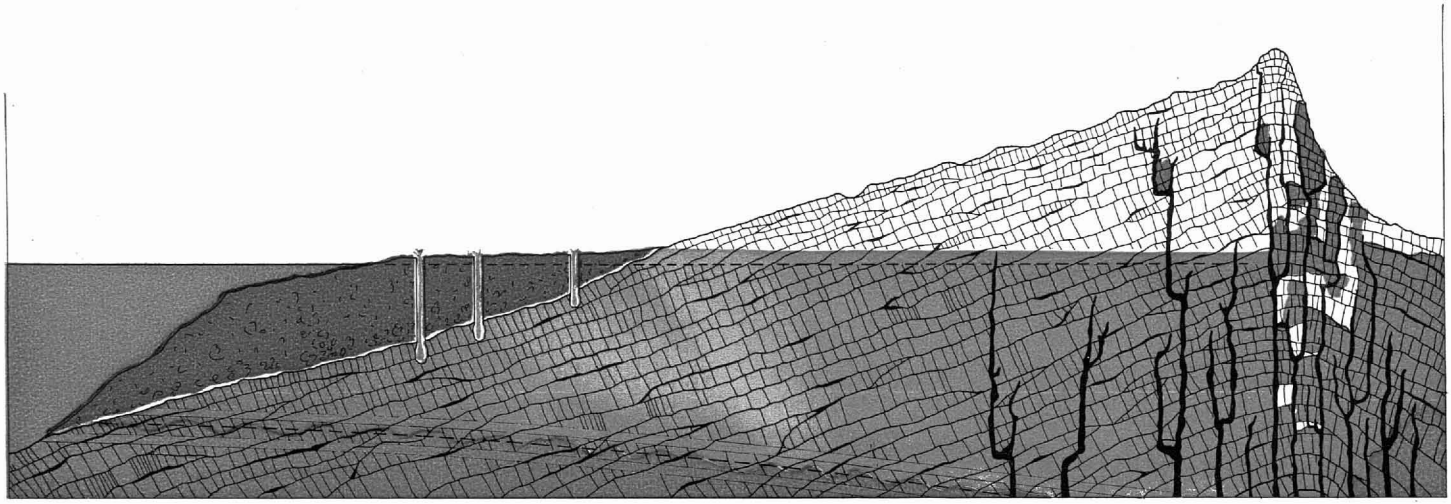

Figure 4. Cross section of the artesian structure at Honolulu during the period 1880 to 1890 showing the relationship of the depth of the fresh water lens to the deep artesian wells on the coast line.

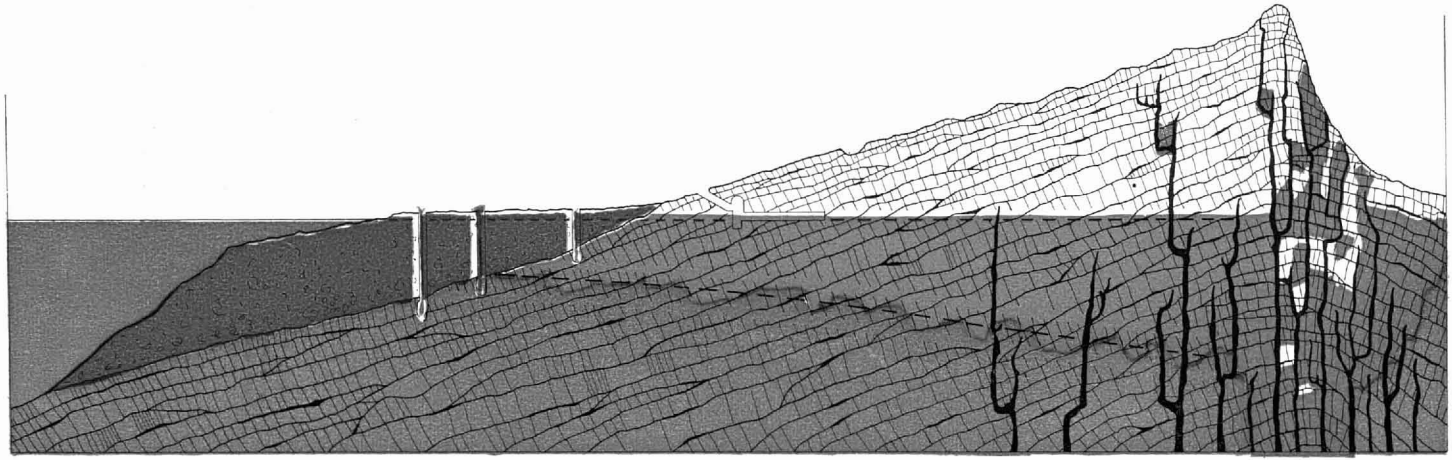

Figure 5. Cross section of the artesian structure of Honolulu at the present time showing the effect of the depressed water table on the deep artesian wells. The lowering of the water table and rising of the transition zone necessitate the replacing of artesian wells with the modern method of shaft and development tunnel.

pressure and is not artesian water. Necessarily it must be lifted to the surface.[22]

Isopiestic Areas

Alternating ridges and valleys extend from the mountains down to and under the coastal plain. That is, beneath the coastal plain a buried ridge lies opposite each major exposed ridge and is continuous with it, and a buried valley lies opposite and is continuous with each major existing valley. This resulted from the subsidence of the island during the later stages of its development and the "drowning" or burying of the lower extensions of the ridges and valleys under the coastal plain that was formed over them. The deeply eroded valleys became filled with relatively impervious sediments that "overflowed" the tops of the lower extensions of the ridges and that are a part of the general caprock formation. The caprock, therefore, not only blankets portions of the seacoast, but in various places it extends inland up the existing stream valleys and down into their lower buried extensions. The lower face of the caprock formation as a whole overlies the water-bearing lava rock, "and is therefore somewhat like a tremendously enlarged piece of corrugated roofing, except that the corrugations are of unequal size. The corrugations correspond to the buried ridges and valleys."[23]

Thus these "drowned" or buried valleys form a series of inverted dams that project downward from the general bottom of the impervious caprock, and that separate buried ridges of pervious water-bearing rock. The areas between these inverted subterranean dams are to some degree independent of each other and have hydrologic properties of their own.[24] The piezometric surface within each area differs from that of the others, but throughout each area the piezometric surface is about the same. That is, the water level in the wells of any one area will rise to nearly the same height above sea level, but this practically uniform static head of water in the wells throughout an area is not the same as that in the wells of an adjacent area. These areas are called "isopiestic" areas, that is, areas of equal artesian pressure.

Twelve isopiestic areas have been mapped on Oahu. The extensive body of caprock southwest of the Koolau Range includes 7 contiguous areas, of which the most easterly 5 with their intake regions contain the

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[22] Under some circumstances it is conceivable that such water could be made to flow by gravity upon the surface through a long horizontal tunnel, but the outlet of such a tunnel would be at a very low elevation above sea level and there are probably few places at which it would be economically justifiable.

The methods in use in the Islands for the recovery of basal nonartesian water are by pumping from wells of the usual type, drilled or dug from the surface, and by pumping through vertical or inclined shafts that extend slightly below the water table. At the bottoms of the shafts are located pumping stations that are supplied by water collected in sumps from infiltration tunnels driven from the bottoms of the shafts to skim fresh water from the upper part of the zone of saturation, or by shallow wells drilled from the bottoms of the shafts, or both. (See figures 3 and 5.)

Horizontal tunnels that discharge by gravity upon the surface are used to recover high-level ground water from the dike complex at high elevations. In a few cases shafts and underground pumping stations are used to obtain water impounded by dikes.

The several types of wells in use in Hawaii are classified by Stearns, H. T., op. cit., Bul. 5, pp. 6-7. Shaft-type wells are described by the same author, op. cit., Bul. 1, pp. 324-325; Bul. 5, pp. 8-31; Bul. 6, pp. 78-83 and 90-93.

[23] Palmer, H. S., op. cit., p. 35. A discussion of the caprock formation, and of the effect of the buried ridges and valleys upon the hydrologic properties of the Honolulu artesian system, is given by Dr. Palmer on pp. 35-41 of his report.

[24] Palmer, H. S., op. cit., pp. 39-41. Stearns, H. T., op. cit., Bul. 1, p. 259, suggests that dikes may cause a part of the larger differences in head between certain adjacent isopiestic areas, in particular the very large difference in head as between the two easternmost areas of the Honolulu District.

Honolulu artesian system. The body of caprock just east of the northwest corner of the island has 2 contiguous isopiestic areas, and each of the 3 other bodies of caprock along the northern coast comprises 1 isopiestic area. The 2 westernmost isopiestic areas—that is, one each in the southwest and in the northwest—are of the Waianae volcanic series and are fed from the basal water of the Waianae Range, all others being of the Koolau and being fed from the Koolau Range. The isopiestic areas of the Honolulu system are bounded by drowned valleys. Within the outer boundaries of this system are also some valley fills that apparently are not sufficiently long or wide or deep to be effective as subterranean dams. Each of the 2 most westerly (Waianae) isopiestic areas of the island is contiguous to a Koolau area, and appears to be separated from it by sediments and soil laid down on the Waianae basalts prior to the emplacement of the Koolau basalts in such areas, rather than by a drowned valley or by dikes.[25]

The Honolulu Artesian System

The Honolulu District contains 4 major isopiestic areas and 1 minor area. This artesian structure is the principal source of domestic water supply for the city, and serves important industrial and agricultural purposes as well (see p. 225, below). Adjoining it on the west is an isopiestic area within which very large quantities of water are withdrawn for use by sugar plantations—much larger in the aggregate than the total quantity withdrawn in the Honolulu District. These 6 areas are supplied from the same general source —the basal water of the Koolau Range. (See figures 4 and 5.) There are inland limits to the submerged dams that separate the isopiestic areas, and the interrelationships of the several areas appear to be very complex.

In the course of this study of Hawaiian water laws, the present writer requested that the Honolulu Board of Water Supply obtain a brief statement with respect to the Honolulu artesian system that would express the latest concepts of local engineer-geologists. This was considered desirable because of the very complicated physical factors that appear to influence the ground-water supply of the Honolulu District, and that should be fully considered in determining rights to the use of ground waters in this area and in adjacent areas having ground-water supplies physically related to those underlying the district. Questions that are of fundamental importance, both practically and legally, are as to whether heavy drafts within one isopiestic area may impair the accustomed water supplies of adjacent areas, either by drawing water directly in from other areas around or under the upper ends of the submerged dams, or by inducing a relatively greater flow into the heavily pumped area from the common source of supply; whether the combined draft upon the Honolulu system might be substantially increased by heavy pumping, and whether this would necessarily be done at the expense of the water supplies of adjacent agricultural areas on the west; whether heavy pumping, even though it resulted in increasing the area of influence, would be likely to deplete seriously the net storage and increase the salinity of the water in the heavily pumped areas; and if such an induced increase in supply would be accompanied by some injury to it, whether the increase would compensate for the injury. The question of possible increase

[25] Stearns, H. T., op. cit., Bul. 1, pp. 259, 264-267. Maps showing locations of the 12 isopiestic areas of Oahu, by numbers, are given in Bul. 1, p. 236, and Bul. 5 (op. cit.), plate 2. The frontispiece of Bul. 5 contains a diagram illustrating the hydrology of the Honolulu artesian system, including the buried ridges and valleys and extensions of the caprock up the present stream valleys.

in salinity arises because of the 1-to-40 ratio between fresh water above sea level and that below sea level, which means that for each foot by which the head is lowered by pumping, the salt water will tend to rise about 40 feet.

Conforming to the above request, a statement entitled "The Honolulu Artesian Basin," dated March 29, 1940, was provided and is quoted below. It will be noted from the concluding paragraphs that these engineer-geologists considered that, on the basis of information then available, positive answers to some of the questions recognized as fundamental were not yet justified. The statement follows, in full:[26]

"The island of Oahu in the Honolulu area differs from a simple island consisting of permeable rocks in two respects which exert an important influence on the occurrence and behavior of ground water. In such a simple island in a rainy climate the ground water is retarded in its outward flow only by the slight resistance offered by the rock and forms a low lens-shaped mass which rises at the top slightly above sea level and which floats on the sea water. In this lens the fresh water extends about 40 times as far below sea level as the upper surface stands above sea level, in response to a principle of flotation known as the Ghyben-Herzberg theory. In an island like Oahu, with dikes in the interior, the water is trapped or restrained between the barrier dikes and stands higher than it would in a simple island. In the seaward, dike-free parts of Oahu the outer parts of the water table have low, gentle slopes like those of a simple island.

"The Honolulu area, however, is flanked along its seaward margin by a coastal plain composed largely, but not wholly, of sedimentary rocks. This formation differs from the main mass of Koolau Range lava flows in being highly impermeable, whereas the lava flows are very permeable. This formation thus forms a comparatively tight cap rock, which along the coastal plain lies against and over the main water-bearing lava flows of the island. The effect of this cap rock is to restrain the outward movement of the basal water and cause it to pile up in the Honolulu area to heads in excess of 30 feet at present, or over 40 feet prior to the drilling of the first artesian wells.

"Where the water is accessible by shaft driven in the Koolau lava flows and has a free upper surface or water table, it is called *free basal water,* or briefly, *basal water;* where water from the same supply which has passed under the cap rock and is reached by artesian wells is found under artesian pressure, it is called *artesian water.*

"Continuous with the cap rock of the coastal plain of the Honolulu area are tongues of similar, valley-filling sedimentary materials, which extend inland in the chief valleys. The bed-rock bottoms of these valleys are cut from 300 to 1,000 feet below sea level, and they have since been filled to their present floors by accumulation in them of alluvial gravels, talus materials and some late lava flows and air-laid volcanic detritus. Since the bottoms of the valley-fill tongues lie well below sea level at the inner edge of the coastal plain and remain below sea level for distances of ½ to 2 or 3 miles inland, the lower parts of these valley-fill tongues of cap rock exert

[26] This statement was prepared by Chester K. Wentworth, Geologic Engineer of the Board of Water Supply. It was signed by Dr. Wentworth, by H. T. Stearns, Geologist, U. S. Geological Survey, and by W. O. Clark, Geologist, Hawaiian Sugar Planters' Association. Accompanying letters from John McCombs, Engineer for the B. P. Bishop Estate, and from Harold S. Palmer, Professor of Geology, University of Hawaii, indicated that there was nothing in the statement with which they disagreed or to which they had objection.

an important influence on the movement and elevation of basal water in adjacent ridges and on the corresponding pressure of the artesian water under adjacent parts of the coastal plain. The effect of these impermeable, valley-bottom ribs of cap rock, by their restraining effect on ground water movement, is to separate the basal and artesian water into several independent areas, which are known as isopiestic areas.

"Within each of these isopiestic areas, artesian and basal heads are found by measurement to be uniform within 2 or 3 inches; between adjacent areas within distances of 500 to 2,000 feet the heads differ by 3 to 20 feet. The head in a given isopiestic area is determined by the rate of rainfall and infiltration, by the loss to or gain from adjacent areas, by the artificial draft from wells or shafts, and by the loss or leakage toward the ocean, through or under the cap rock. In dry weather or at times of excessive draft, heads in all areas are lowered. With excessive draft on one area, through its wells or basal shaft pumping stations, its head alone may be strongly lowered, even to the point of depressing its head below that of an adjacent area whose head is normally lower.

"Details of the quantitative characteristics of the several isopiestic areas in their yield, seaward and lateral leakage, storage and other features are only imperfectly known, though large amounts of data on pumping and heads are available and certain qualitative relationships can be formulated. It has been recognized that by heavy pumping and lowering of head in one area, the amount of water dischargeable from it, derived both by reduction of seaward leakage and by increase of area of influence and supply, can be increased. On this ground, it has been suggested by some that the general head of the several isopiestic areas of the Honolulu system should be lowered so that water in substantial quantities would be drawn in from areas outside the present city limits.

"Considerable doubt is held by others as to whether quantities so obtainable (as yet quite unknown) would be sufficient to compensate for the depletion of storage and possible increase of salinity which might attend such general lowering of the head. Still others feel that with the probable large but unknown discharge of storage from the bottom of the groundwater lens (known technically as the Ghyben-Herzberg lens) in response to the lowering of the head, and with the likelihood that such lagging discharge of storage continues even during ordinary short periods of rising artesian head, it may be exceedingly difficult to determine how much of the increased yield made available by lowered head is derived by indraft from surrounding areas and how much from slow, lagging depletion of bottom storage in the same area. Only long periods of experimentation with full pumping facilities of all stations available, and with procedures cautiously adjusted to results progressively indicated, will furnish answers to these and other fundamental questions."

Physical and Legal Interrelationships

It follows from the foregoing statement of the occurrences of ground water, that direct physical relationships exist among the large bodies of ground water in the Islands. Thus water in the dike reservoirs overflows or leaks at certain points in the form of springs, which contribute to the perennial water supplies of certain streams on the surface; and water also leaks

from the dike complexes and joins the body of basal water. Some water in the surface streams flows directly into the sea, while some leaks into bodies of perched water, the contents of which in turn may discharge into the sea at shallow depths or may percolate to the basal water table. Some water perched on alluvium in the stream bed may likewise reappear on the surface downstream; such waters, whether or not they reappear on the surface in substantial quantities, may conform to the legal classification of a "definite underground stream" and in places may conform to the phase known as the "underflow" of a surface stream. And the basal "percolating" water, while mostly nonartesian, consists in places of artesian water of great economic importance.

The usefulness of a water supply obviously depends upon continued replenishment from the accustomed sources of its supply. Freshet flows of streams follow closely upon storms, but the natural[27] perennial flows of those streams that flow perennially are fed principally by water from springs and from seepage areas, that is, by water that previously has entered the ground. In large measure, then, the availability of these natural perennial stream flows for use depends upon maintenance of the contributing ground-water supplies. Likewise, uses of ground water in bodies that are fed in part by percolation from surface streams depend to that extent upon the unimpaired flows of the surface streams to the ground-water intake areas. And basal artesian waters are supplied from bodies of nonartesian water.

Examples of Legal Importance of Physical Interrelationships

Some of the water impounded behind dikes leaks upon the surface in the form of springs, some of which are the fountain-heads of surface streams, as stated above. It is well recognized in Hawaiian water law that rights to the use of water of streams attach to springs that constitute part of the source of supply of such streams, that is, that an interference with the flow of such a spring is an infringement upon previously established rights in the stream itself (see p. 68, above). This general principle was involved in a suit for the adjudication of water rights in Manoa Valley, Oahu,[28] in which certain issues have already been decided with respect to water that has been shown to have leaked from the dike structure into a surface stream under natural conditions. A tunnel constructed by the City and County of Honolulu in upper East Manoa Valley, and which was connected with the city distribution system and later operated by the Board of Water Supply, penetrated two dikes and yielded a considerable quantity of water. One of the issues in the adjudication suit was whether, by diverting the water flowing from this tunnel, the Board of Water Supply was actually intercepting water that otherwise would have flowed in East Manoa Stream and thence in its natural course through Manoa Valley. This issue, after a hearing, was decided in the affirmative; and the next issue was what portion of the water so diverted at the time the petition was filed would have flowed in the stream in the absence of any such tunneling or interception or diversion—in other words, what proportion of the flow from the tunnel was water that would have leaked from the dike structure into the stream under natural conditions

[27] The present discussion is not concerned with the question of return waters from irrigation.

[28] *Bishop Estate* v. *Territory of Hawaii*, Special Proceedings 232, Circuit Court, First Judicial Circuit.

had the tunnel not been constructed, and that therefore was not water actually developed by the tunnel. Scientific tests to determine this proportion were made pursuant to a stipulation between the parties, and based upon the results thereof, the court found that this proportion was 17.1 percent of the water flowing from the tunnel. The balance of 82.9 percent, therefore, would not have augmented the supply of this stream under natural conditions at the time of the filing of the petition. Thus a physical relationship between tributary ground water and the flow of the surface stream was legally established. The effect of this relationship upon rights of use in the stream was to be determined and adjudicated, along with other issues in the case. However, the suit was discontinued at the request of the Bishop Estate on August 22, 1945.

Water in a gravel stratum underlying the stream bed in a section of the channel of Wailuku (Iao) Stream, Maui, was involved in a controversy over water rights in that stream (see p. 170, below). This water was not found, from the evidence, to be contributing to the surface flow. The importance of the gravel stratum to the downstream night-time rights arose from the necessity of resaturating a portion of the gravels each evening because of the reduced level of the stream during the day, when water was being diverted under day-time rights that had been transferred upstream. This occasioned a lag in the flow over the gravels when the water was released upstream in the evening, and hence delayed its arrival at the downstream headgates. Thus a legal relationship between the surface flow and the water in the underlying gravels was established because of the existence of the physical relationship.

The third example—the *City Mill Company* case,[29] involving artesian waters under Honolulu—is one in which a physical relationship of vital importance exists, but was not in issue in the proceedings and was not established legally or even discussed in the opinion of the court. The water directly involved was basal water confined by overlying caprock and hence under artesian pressure. Other basal water not confined by an overlying impervious stratum is not under artesian pressure; yet in this area and in some other areas along the coast of Oahu, the basal water consists of both confined (artesian) and unconfined (nonartesian) water, each part of the basal water being part of one common body of ground water (see pp. 156 and 162-163, above). Heavy withdrawals from either the artesian or the nonartesian portion necessarily affect the physical conditions in the other portion. This decision purported to lay down the broad principle that the owners of land under which there is an "artesian basin" are the owners of the artesian waters of the basin. The case did not involve claims of ownership of or control over nonartesian waters just outside and inland from the basin, essentially part of one common supply, and the opinion of the court does not discuss these adjacent and connected nonartesian waters at all. Hence, while the physical relationship between the artesian and nonartesian portions of the underground reservoir is well known, the legal relationship between the "owners" of this artesian water and possible claimants of rights in the directly connected nonartesian water remains to be established.

[29] *City Mill Co.* v. *Honolulu Sewer & Water Commission*, 30 Haw. 912 (1929).

Definite Underground Streams

References have been made in several decisions of the supreme court to the possible existence of underground streams capable of reasonably definite ascertainment, and to the legal implications thereof. No decision has been found, except in the case of the subflow of a stream, in which it was necessary to pass squarely upon such implications. However, aside from the matter of criteria by which to determine the existence of a definite underground stream, the discussions in the opinions have value as indicating the leaning of the court.

The question of subflow or underflow of a surface stream, although a phase of the general subject of definite underground streams, has certain features peculiar to itself and merits separate discussion. Furthermore, there has been an actual decision with respect to one feature of this phase, whereas conclusions as to the general subject are largely inferential.

Physical Characteristics

The physical situations thus far presented to the Supreme Court of Hawaii have not been such as to disclose the specific criteria that would govern the classification of a "definite underground stream." This question has been considered in various mainland decisions and has caused much difficulty. It is easy to say that such a stream has all the elements of a surface watercourse—definite channel with bed and banks, substantial stream of water, and definite source of supply—but to substantiate the existence and location of those elements with reference to a subterranean body of water is a very different matter from establishing the classification of a surface watercourse. Some mainland courts have been liberal in applying the concept of a surface watercourse to a given set of subterranean conditions shown by the evidence to exist, and others have been very strict.

The only supreme court decision in Hawaii that appears to contain a description of the physical characteristics of a specific underground flow, concerned a water-bearing gravel stratum 25 to 40 feet thick, which lay immediately below the bed of a surface stream and which rested upon a practically impervious substratum, the water in the gravel stratum being subject to replenishment from the surface stream under certain conditions, but appearing to pass underground to the sea without reappearing in the stream bed in the absence of ordinary surface flow. The court did not call the water in this gravel bed "underflow" or a "definite underground stream," and did not discuss the physical features that would be necessary to constitute either. The physical conditions that controlled the decision were (1) the dewatering of a portion of the gravel bed during the day, resulting from daytime diversions upstream, and (2) the lag in the nightime flow of the stream resulting from the necessity of again saturating part of the gravels.

References to the existence of definite underground streams in the other cases are purely negative. True, there are broad statements concerning the necessity of "known and well defined channels"; but there appear to have been no specific examples of subterranean flows of water that were described by the Supreme Court of Hawaii as conforming to this general legal classification.

Legal Principles Relating to Definite Underground Streams in General

The supreme court in several cases has had occasion to discuss the matter of rights to the use of ground waters flowing in ascertained and defined streams. The view of the supreme court appears to be that the rules of law that govern uses of waters of definite underground streams are not the same as those that apply to other ground waters. It would also appear that one who asserts a right in a definite underground stream must prove the existence of such stream by competent testimony, although under other circumstances a presumption may arise that a defined channel underlies a surface channel. Whether proof would necessarily include, not only the existence but also the extent, location, and characteristics of the subterranean channel within reasonable limits, the court has not intimated. The existence of such a subterranean stream was not proved in any of the cases that reached the supreme court (except in the case involving underflow), and so the general rules that apply to such streams have not been definitely announced by the court. However, there is a strong intimation that the holders of established rights in a spring fed by a definite underground stream would be protected against interference with this source of supply of the spring.

Cases in Which Considered

The general question of rights to the use of ground waters flowing in an ascertained and defined stream was considered in the early case of *Davis* v. *Afong,*[30] in view of the contention of counsel that the opposing party had no right to the accretion to a spring by subterranean percolation or by surface flow from another spring. The opinion of the court had stated that the water from one spring flowed into another spring. The court quoted principles to the effect that rights to subterranean waters not in known or defined courses are not the same as those governing surface and ground waters in known stream channels. Washburn on Easements was quoted to the effect that:

> The controlling circumstance is not whether the stream was above or below ground, but whether it was or was not *ascertained* and *defined* as a stream. If there is a natural spring, the water from which flows in a natural channel, it cannot be lawfully diverted by any one to the injury of riparian proprietors. If the channel or course underground is known, it cannot be interfered with.

The doctrine that rights cannot be acquired in subterranean, unknown, percolating water was apparently approved. However, applying those principles to the case at bar, it was found that the water came from the springs into an auwai in known and ascertained channels, pointed out by witnesses and marked on a chart in evidence; and it was held that the principles were applicable to artificial watercourses such as this auwai, as well as to natural streams, and that a prescriptive right could be and had been acquired to the waters flowing from the springs into the auwai, subject to the rights of adjacent kalo patches to be supplied from the auwai.

There was no known and defined underground stream in the foregoing case, so far as the opinion discloses. The flow from the one spring into the other spring was evidently in a "known and ascertained channel" on the surface. What the court seems actually to have decided, with reference to this

[30] 5 Haw. 216, 222-224 (1884).

contention of counsel, was that a prescriptive right had been acquired to water flowing from a spring into an auwai in a known and ascertained channel, regardless of the suggestion that some of the water of the spring may have come by subterranean percolation from another spring.

Again in *Wong Leong* v. *Irwin*[31] there is a statement that:

> Subterranean waters, to be the subject of rights, must, like surface waters, in general flow in known and well defined channels. Gould on Waters, 2d Ed., Secs. 280, 281, citing *Davis v. Afong,* 5 Haw. 216, and numerous other cases. * * *

It was not shown in this case that the seepage from upstream lands that was claimed as an increment to lower springs would follow the course of the surface drainage, or if so, that it would reappear in the lower springs, "much less that it would flow underground in known and well defined channels." Hence the owners of the spring had no rights in the flow of that seepage.

The question of the existence of a definite underground stream was raised in still another commissioner proceeding,[32] brought to establish a right to the use of all the surplus water of a certain lele of which the petitioner alleged ownership, in which case, however, the petition was ordered dismissed because of insufficiency of the petition and absence of record evidence of notice (see pp. 48 and 52, above). A stream arose near the upper end of the lele. Ordinarily the stream disappeared before reaching the lower end, but in times of freshet it flowed down to certain springs, below the lele, that were the ordinary source of supply of a stream from which numerous lands obtained water. The commissioner decided, on the evidence, that the water that sank within the lele did not flow in a known and defined channel underground to the springs; that the users of water from the stream supplied by the springs were entitled to the surface freshet waters that reached the springs; but that, with one minor exception, the owners of the lele were entitled to all the ordinary water (that is, the flow that disappeared except in times of freshet) and might divert it to any other lands as they saw fit.

The decision of the commissioner was reversed and the petition ordered dismissed on procedural grounds, as above stated. However, the court stated that perhaps the same practical result would be reached if the case were to be decided on its merits. That is, this was not a case brought to restrain this landowner from making some particular diversion of water, with the burden on complainants of showing injury from such diversion "or that the water that sinks on Kaea comes out in the Mahoe springs below and that its passage underground is in a known and defined channel." On the contrary, it was a case brought by an owner of land proposing to divert water therefrom in unindicated quantities at unindicated points, and with the burden of showing that *any* diversion would not injure others "or that the water that sinks in Kaea does not flow underground to the Mahoe springs in a channel that is defined and capable of reasonable ascertainment." Necessarily the petitioner could make a diversion if not injurious to others, but to effectuate the unlimited right that it sought, must prove that "no diversion whatever" could injure others. The decision, to have practical value, would have to include

[31] 10 Haw. 265, 270 (1896).

[32] *Palolo Land & Improvement Co.* v. *Territory of Hawaii,* 18 Haw. 30 (1906).

a finding to this effect, and such finding the court naturally declined to make in advance.

Discussion of Cases

The existence of a definite underground stream was not proved in any of the foregoing cases. In the *Davis* case there does not appear to have been even a suggestion that such a stream existed; on the contrary, the suggestion was that there may have been subterranean percolation from one spring to another, but proof of even that, if submitted at the trial, was not discussed by the supreme court. In the *Wong Leong* case nothing was shown except as to the natural surface drainage. And in the *Palolo* case the commissioner found from the evidence that the water that disappeared did not follow a definite underground channel to the springs. The actual decisions in these cases thus related only to waters that were not proved to be flowing in defined subterranean channels. It would appear that the statements in these decisions as to rights in definite underground streams were not necessary to the decisions.

The repeated dicta, in the absence of actual decisions, are important so far as they disclose the view of the court, first, that definite underground streams are governed by different rules from those that apply to ground water not in defined channels; second, that one who asserts a right to the use of water flowing in a defined subterranean channel has the burden of proving the existence of such channel, but that under strong circumstances, where an upstream party asserts the right to divert water that disappears in a stream bed in the downstream portion of which springs arise, that party has the burden of showing that the water does not reach the springs in a defined underground channel; and third, that "rights" may attach to waters proved to be flowing in known and ascertained subterranean channels. What such "rights" may be, the court has not yet ruled, for such proved waters have not been in litigation. However, the strong intimation in these decisions is that the holders of established rights to the waters of springs that are fed by definite underground streams, would be entitled to the uninterrupted flow of such tributary subterranean streams to the same extent as would be the case if the tributary streams were on the surface. The comments in the *Palolo* case, partly paraphrased and partly quoted above, while not controlling the actual decision, lend particular support to this inference.

The principle that rights to the use of the waters of definite underground streams are governed by the same rules of law as those that pertain to surface watercourses, is well established on the mainland.[33] It is believed that the Supreme Court of Hawaii has not yet passed judgment upon actual adjudications of rights in defined underground streams. However, there appears to be nothing in ancient Hawaiian water law or custom that would militate against the application of the above principle if a case should arise in which it would be necessary to define such rights.

[33] Weil, S. C., "Water Rights in the Western States," 3d ed., vol. II, sec. 1077, p. 1011 (San Francisco, 1911); Kinney, C. S., "A Treatise on the Law of Irrigation and Water Rights," 2d ed., vol. II, secs. 1157 to 1160, pp. 2101-2106 (San Francisco, 1912). The statutes of some States specifically provide for the appropriation of waters of defined underground streams, but regardless of specific provisions in the appropriation statutes, the court decisions in the Western States invariably have upheld the appropriability of such waters, subject to vested rights; and decisions in the States that recognize the riparian doctrine, apply the riparian rule to definite streams underground as well as to those on the surface: Hutchins, Wells A., "Selected Problems in the Law of Water Rights in the West," U. S. Dept. Agric. Misc. Pub. No. 418 (1942), pp. 151-155 and Part 3 of Ch. 4.

Relation of Underflow to Rights in Surface Stream

The underflow or subflow of a surface stream, in mainland legal contemplation, is difficult to define with accuracy. Generally, it may be stated to be that portion of the whole watercourse that is found in pervious material over which the surface stream flows, and that occurs within reasonably well defined limits which, however, may confine laterally a space substantially wider than that occupied by the surface portion of the stream. Where these surface and subsurface flows have been found to be components of a single watercourse, and not to constitute two independent watercourses, it has been held not only that the underflow is governed by the same rules of law that apply to the surface stream, but that rights in the underflow are included in rights in the surface stream, as incident thereto.[34]

The Supreme Court of Hawaii, in one of the Wailuku or Iao Stream cases,[35] decided a point concerning water which probably would conform to the mainland concept of "underflow," but without so terming it. One of the numerous questions in this case was the extent to which respondent had exceeded its adjudicated rights by diverting water at Maniania dam, at which point no water was being diverted at the time of the adjudication,[36] but at which water had since been taken pursuant to a transfer upstream of certain day-time rights held by respondent. The commissioner had found that the bed of the stream from above Maniania dam to the sea was underlain by a stratum estimated as 25 to 40 feet thick, composed of loose boulders, sand, and gravel, and resting upon a practically impervious substratum. Complainant's theory was that the gravel stratum constituted a subterranean reservoir from which the supply of the stream was augmented at certain points, while respondent contended that the water in the gravel stratum passed underground to the sea without reappearing at any point in the river bed. Both theories were based upon expert testimony; but the fact had been clearly established that in the absence of ordinary surface flow, no seepage or spring water ever had been known to appear in the stream bed, hence the court considered that on the evidence the respondent's theory was the correct one.

The conclusion that respondent was advancing with respect to the exercise of its rights, as the result of this theory, was not stated in the opinion of the court. However, the undisputed existence of this gravel stratum, in contact with the bed of the stream, was considered by the court as of some

[34] See Wiel, S. C., "Water Rights in the Western States," 3d ed., vol. II, secs. 1078 to 1081, pp. 1012-1021 (San Francisco, 1911); Kinney, C. S., "A Treatise on the Law of Irrigation and Water Rights," 2d ed., vol. II, secs. 1161 to 1165, pp. 2106-2118 (San Francisco, 1912). A fairly recent decision in which the question of subflow was material, *Maricopa County Municipal Water Conservation District No. 1* v. *Southwest Cotton Co.*, 39 Ariz. 65, 4 Pac. (2d) 369 (1931), is reviewed by Smith, G. E. P., "Groundwater Law in Arizona and Neighboring States," Ariz. Agr. Expt. Sta. Tech. Bul. 65 (1936), pp. 64-70. A recent symposium on this subject appears in the Transactions of the American Society of Civil Engineers: Tolman, C. F., and Stipp, Amy C., "Analysis of Legal Concepts of Subflow and Percolating Waters," Trans. Amer. Soc. Civ. Eng., vol. 106 (1941), pp. 882-933. In this symposium legal concepts of underflow, and physical conditions that influence the discharge of stream water into the ground and recharge from the ground, with their effect upon the actual interdependence of water flowing in the bed of the surface stream and that in the ground beneath it, are discussed by the authors of the principal paper and by several attorneys, engineers, and geologists.

[35] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 693-694 (1904). The Wailuku (Iao) Stream controversy has been discussed heretofore, p. 71 and following. The effect of the time required to saturate the stream bed upon the right to change old water rights to other lands has been discussed above, pp. 137-138 and 165.

[36] See *Lonoaea* v. *Wailuku Sugar Co.*, 9 Haw. 651, 657, 665 (1895), and *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 14 Haw. 50, 56-57 (1902).

importance in determining whether or not injury followed from diverting, during the day at Maniania, water covered by day-time rights transferred upstream. Necessarily, after completing a diversion at Maniania each evening and returning the water into the stream, an appreciable period of time was required for the water to flow down the channel to the lower points of diversion of those having night-time rights (the closest of these headgates being about a mile downstream), owing to the distance to be traversed. But in addition to this factor, the court stated that delay of a certain portion of the released water was occasioned by the "saturation of a portion of the gravel bed made necessary by the reduced level of the stream" during the day. The net result was a lag in the movement of the water downstream; and inasmuch as the use of a large part of the stream was on a rotation basis, the downstream users who had night-time rights being entitled to begin their diversions at 4 P.M., any substantial lag in the flow had a material bearing upon the exercise of their rights. The respondent, therefore, was required to release the entire stream at Maniania each day at a sufficiently early hour to insure its reaching the lower auwais in its accustomed volume at the hour at which it was lawfully due there.[37]

In reaching its decision on this point, the court did not lay down or even discuss any broad principles with respect to the "underflow" of a stream. The case was decided on the general principle, long established, that a change in the exercise of a water right is permissible only to the extent that the change does not result in impairing the rights of others. As that principle was applied to this case, in substance, the rights of "others" depended upon maintenance of the full natural surface flow of the stream at their headgates, in both time and volume, which in turn appeared to depend in part upon maintenance of the full natural supply of water in the gravels beneath the stream bed, so that the result of depleting that underground supply would be to work an injury to such rights. Therefore a change in the exercise of another water right that had this injurious result was subject to injunction.

Ground Waters Not Flowing in Defined Streams

All ground waters other than those flowing in what the evidence in a case would show to be "definite underground streams" are considered under this general heading. Both artesian and nonartesian waters are included. The court decisions are here considered separately with reference to each of these groups. This is being done because in the most recent decision the question as to whether rights of use of artesian waters are on the same basis as those in nonartesian waters was apparently left open, and also because the regulation of artesian wells is in itself a distinct subject that has had not only legislative treatment but also some consideration by the court. The status of the law of ground waters is thereafter discussed, with particular reference to ground waters not in defined streams, in an attempt to integrate the extant principles, followed by a discussion of the statutory regulation of artesian wells.

Granting that under some circumstances waters under artesian pressure might be found to be moving in what the court would classify as a "definite underground stream," no discussion of that possibility has appeared in the

[37] Injunction was authorized restraining the respondent, among other things, "from diverting water through the Maniania ditch by day at such time as to prevent the entire water in the Wailuku stream from being at 4 o'clock p.m. where it would be but for such diversion at Maniania."

supreme court decisions. The term "artesian basin" was used to designate the area within which artesian waters occur. There are obvious difficulties in setting up a legal classification of ground waters on the basis of the few decisions rendered thus far, but the writer believes that the import of the decisions is better understood by considering artesian waters generally as a part of the legal group of ground waters other than those flowing in definite streams.

[A] NONARTESIAN "PERCOLATING" WATERS

Four cases in the Supreme Court of Hawaii have dealt more or less directly with ground waters that were not indicated in the opinions as being under artesian pressure, and that were not shown by the evidence to be flowing in "definite underground streams." In the absence of proof to the contrary, these waters are considered to be so-called "percolating" waters.

The court questioned the legal possibility of acquiring "rights" in such waters. For practical purposes, this would question the right of a landowner or holder of a right in a spring to enjoin an upper landowner from so altering the flow of percolating water under his own land as to prevent it from taking its natural course to the substrata of the lower land or to the spring fed by such water, or the right to enjoin a diversion of surface water that otherwise would sink into the ground and eventually reach the lower land or spring by a subterranean course other than a known and ascertained channel. But while the court accepted the view that such "rights" in percolating waters could not be acquired, its opinions do not indicate that in any of these cases the percolating waters in dispute actually were proved to be common to two different ownerships of land or different ownerships of rights in specific sources of water supply.

The court, since the rendering of these decisions, has adopted the correlative doctrine with respect to the waters of an artesian basin, in a decision that tends to cast doubt upon the effect of the earlier nonartesian-water cases. It is believed that the question of "rights" in nonartesian waters has not yet been settled, and that if a case specifically involving nonartesian percolating waters were to arise, these earlier cases would be properly subject to reexamination.

Cases Involving Nonartesian Waters

The three cases[38] heretofore considered in connection with defined underground streams in general bear likewise upon the present discussion. The other case[39] that was discussed concerning the underflow of a surface stream also involved, as a minor point, the use of water developed from a tunnel.

Davis v. Afong

The court upheld a prescriptive right to water flowing from springs into an auwai, the water of one of the springs being augmented by the overflow from a higher spring. It appears that the surface flow from the higher to the lower spring was found from the evidence to be in a "known and ascertained channel." Counsel had suggested that some of the increment may have come to this lower spring by subterranean percolation, but the only finding as to the flows from the springs into the auwai refers to "known

[38] *Davis* v. *Afong*, 5 Haw. 216, 222-224 (1884); *Wong Leong* v. *Irwin*, 10 Haw. 265, 270 (1896); *Palolo Land & Improvement Co.* v. *Territory of Hawaii*, 18 Haw. 30 (1906).

[39] *Hawaiian Commercial & Sugar Co.* v. *Wailuku Sugar Co.*, 15 Haw. 675, 680, 691-692 (1904).

and ascertained channels," and this evidently includes the flow from the one spring to the other. This apparently disposed of the question of subterranean percolation, so far as the issues of this case were concerned, for no further mention was made of this suggestion of counsel. However, in leading up to this finding, the court quoted principles to the effect that the rules of law that apply to subterranean percolating waters are not the same as those that govern surface and ground waters in known stream channels, and apparently approved of the doctrine that "rights cannot be acquired in subterranean, unknown, percolating water."

Wong Leong v. Irwin

A claim by the owners of springs to the alleged flow of seepage from higher land was denied by the court. There was no showing as to the course of the seepage water or whether it would reappear in the springs, much less that it would follow a definite underground channel; according to the court, it was "entirely uncertain what direction the water would take after leaving the surface." Gould's text on water law, which had cited *Davis* v. *Afong,* was relied upon to support the principle that "Subterranean waters, to be the subject of rights, must, like surface waters, in general flow in known and well defined channels." The court added that a prescriptive right could not be acquired to mere drainage water under these circumstances, whether on the surface or underground, citing *Peck* v. *Bailey,*[40] and stated that at most this would be only a case of *damnum absque injuria.* Thus the claim made by the owners of the springs was disposed of.

The Hawaiian Commercial & Sugar Company Case[41]

A minor point concerned the relation of developed tunnel water used at a mill to the owner's adjudicated rights in stream water used at the mill. There was no controversy over the "ownership" or right of use of the tunnel water. The tunnel had been dug by respondent on its own land after the date of the adjudication. The court stated (at p. 680) that "It is undisputed and clear that such tunnel water is the property of the defendant and may be used by it as it sees fit." Presumably referring to the same water, the court stated later that complainant contended that the tunnel water developed and owned by respondent, in so far as it was used at its mill, could not be held to justify an increase of acreage by respondent. In aswer to this, the court stated (at pp. 691-692):

> The quantity of water so developed must be regarded as a net gain over the quantity to which respondent was entitled under the *Lonoaea* judgment, because at the date of that judgment the respondent was using from the stream water for the same mill purposes and the judgment should, we think, be construed as awarding to the respondent the right to continue to take from the stream for those purposes.

The significance of this point, so far as ground waters are concerned, is the acknowledgment by the court that the tunnel water developed by respondent on its own land was its own property, to be used as it saw fit. While the point was not in dispute, the court considered the property right "clear." That point conceded, it was logical to decide that the quantity of such tunnel water used for mill purposes was in addition to the quantity of stream water that had been adjudicated for such purposes before the tunnel was made.

[40] 8 Haw. 658 (1867).

[41] This was one of the "Wailuku (Iao) Stream cases," to which a number of references have been made in this report.

There is nothing in the opinion in the foregoing case to indicate whether there was a contention that the waters intercepted by the tunnel would have reached the Wailuku (Iao) Stream by subterranean means if not so intercepted. As there was no dispute as to the ownership of the water, it may be assumed that there was no such claim or contention.

The Palolo Land & Improvement Company Case

The question as to whether a definite underground stream flowed from the upper area to the springs apparently was considered important. The commissioner, upon the evidence, decided the question in the negative. The decision of the court turned on points of procedure, but there is a strong intimation in the opinion that the holders of rights in the springs would have no claim upon ground water supposedly feeding the springs but which was not shown to be flowing to the springs in a defined channel. In other words, it is reasonable to infer that the view taken in the *Davis* and *Wong Leong* cases to the effect that "rights" do not exist in ground waters not flowing in definite channels, was still the view of the court when the *Palolo* case came before it in 1906.

In view of the ensuing discussion, it is important to note that nothing in the *Palolo* opinion indicates that the water that sank in the stream bed on the Kaea land actually reached the lower springs in any manner at all. If the commissioner believed from the evidence that some of that water reached the springs by some indefinite subterranean course, such belief is not reflected in his decision as referred to by the court. So far as anything in the opinion of the court discloses, there was no proof of the physical dependence of the springs upon percolating water having its origin in the surface water that disappeared in the stream bed.

Percolating Waters Tributary to Sources in Which Rights Have Been Established

Considering first the *Davis, Wong Leong,* and *Palolo* cases, there appears to have been no showing in any of them that the springs actually were fed by underground percolations the flow of which was interfered with by others. (Springs necessarily are fed by ground waters. The point of this discussion is that none of the opinions discloses that *proof* was made that the sources of supply were *percolating* ground water intercepted by others, that is, ground water not flowing in defined channels.) More specifically, in the *Davis* case there apparently was no actual proof that this percolation even existed; the possibility appears to have been no more than a surmise or an assumption. But had it been found to exist, a question may be raised as to whether such finding would have affected in any way the decision that prescriptive rights had been acquired in the flow from the springs into the auwai in "known and ascertained channels." In the *Wong Leong* and *Palolo* cases water certainly went into the ground—seepage return from irrigation in the one instance, and natural flow in the stream bed in the other; but the course of the seepage in the former case was not shown, and in the latter case the only reference to the movement of the water after its disappearance in the stream bed was the commissioner's finding that it did not flow in a known and defined channel underground to the springs. No known facts as to the ultimate disposal of the ground waters in controversy are even sug-

gested in the opinion in either case; on the contrary, the *Wong Leong* opinion states clearly that nothing as to that was known with certainty.

Conceding that in the *Wong Leong* case percolating water existed—because necessarily there was seepage from irrigation, which seepage was not proved to be flowing in definite underground channels—then, so far as the effect of the diversion of such water upon rights of use in the lower springs was concerned, the decision in that case as to the point under discussion comes down to this: There was no proof that such waters were actual sources of supply of the springs, and hence there was no proof of injury. This case thus supports the rule that one who does not prove injury to his water right cannot enjoin an alleged interference with his sources of supply. Beyond that, the inferences to be drawn from this decision, as well as from statements in the *Davis* and *Palolo* opinions and possibly in the opinion in *Peck* v. *Bailey*,[42] are to the effect that a diversion of *percolating* water while on its way to the springs would not be actionable; but the fact remains that the course of percolating water to the springs was not stated to have been proved in any of these cases.

In the *Hawaiian Commercial & Sugar Company* case there was no mention by the court of any claim that the water taken from the tunnel may have been naturally tributary to the Wailuku River; on the contrary, the ownership of the tunnel water was stated to have been undisputed. Nor was there any discussion by the court of that physical possibility or of its legal implications, hence the decision has no bearing upon that possible question. So far as this general question is concerned, however, it would appear that there is no difference, in principle, between the legal effect of interfering with the tributary sources of supply of a spring and with those of a watercourse upon which rights of use have been validly established. The integrity of a water right depends, obviously, upon maintenance of the natural sources of its supply, which so far as the law is concerned, means protection against such illegal interferences with the sources as result in impairing the usefulness of the right. Whether such an interference is an illegal one depends, in part, upon whether the natural source of supply is legally as well as physically tributary to the source in which the right has been established.

If, then, there is a rule in Hawaii that nonartesian ground waters, even though physically tributary to springs or watercourses, are not legally tributary thereto unless proved to be flowing in known and defined channels, such rule is an inferential result of several decisions of the supreme court, but has not yet been the basis of any decision concerning the right of use of physically tributary percolating water.

Tunnel Water Developed on One's Land

Many developments of ground water in Hawaii have been made by means of tunnels constructed on land owned or leased by those responsible for making the developments. Yet apparently the only supreme court decision in which the right of use of such tunnel water has been involved is the *Hawaiian Commercial & Sugar Company* case.

This decision is not believed to be absolute authority as to the ownership of developed tunnel water generally, for there was no controversy in this

[42] 8 Haw. 658, 668-670 (1867).

case over the ownership of the water. According to the court, it was "undisputed and clear" that the water was the property of the company which had developed it on its own land, to be used by the company as it should see fit. But the only actual decision concerning this water was that the quantity so developed was a net gain over the quantity of water that had been adjudicated out of the stream before the tunnel was made, and that the use of such tunnel water for mill purposes did not affect the company's adjudicated right to use stream water for such purposes.

This, then, was not strictly a decision that the company owned the tunnel water; rather, it was an unqualified acknowledgment and approval by the court of the fact of the company's ownership—it may even be regarded as an *acknowledgment* of a rule of ownership—but in a case in which there was no controversy over the ownership. Had such ownership been contested, the court perforce must have decided the contest before deciding the controversy over the effect of using this tunnel water for mill purposes. But ownership being conceded in the case and acknowledged by the court, the exercise of a specific right of use was upheld as against a contention that such exercise affected the right adjudicated out of the stream.

The court's handling of this point is at least an indication of the view that it might take in a controversy over the ownership of water developed on one's land by tunneling into a formation in which the water is not shown to be flowing in a definite stream, even should the case be not regarded as authority for a flat statement of a rule of ownership.

However, if this case is to be regarded as authority for a general rule that the owner of land owns the nonartesian ground waters developed by tunneling into his land, and may use them as he sees fit, then it must be regarded as having made something of an approach to the English rule of absolute ownership as to such waters, but without calling it that. Yet the English or so-called "common-law" rule of absolute ownership was specifically repudiated with respect to the waters of an artesian basin in a later decision[43] in which the rule was considered inapplicable, on practical grounds, to "artesian waters which are known to flow freely and rapidly through broken rock or other materials permitting of easy passage," and in which it was stated that that rule "may, or it may not, be applicable to waters merely oozing in or seeping through soil." Granted that this latter statement had no bearing upon the issues of the *City Mill Company* case, it at least raises a question, when considered in the light of the court's whole discussion of subterranean waters, as to the general applicability of the rule of "ownership" that the court had accepted in the *Hawaiian Commercial & Sugar Company* case with reference to tunnel water for the purposes of that case.

The question apparently comes down to this: No conflicting claims to the use of the tunnel water were asserted in the *Hawaiian Commercial & Sugar Company* case, either by owners of other lands underlain by the ground water (if there were any), or by holders of rights in a surface watercourse fed by such ground water (if that was the physical situation), and so it was not necessary for the court to consider such relationships. There is no conflict of interest with respect to ground water that is confined in its natural state to land in a single ownership and that is not part of the supply

[43] *City Mill Co.* v. *Honolulu Sewer & Water Commission*, 30 Haw. 912, 924 (1929).

of a stream on which rights of others exist; and in such case, no reason is apparent for applying a rule other than that of absolute ownership. But would that rule of absolute ownership now be applied to waters developed by a tunnel, if these waters are shown by the evidence to be part of an underground supply of water that moves readily through strata that are common to an extensive area of land in several different ownerships? And would that rule have been applied at the time of the *Hawaiian Commercial & Sugar Company* decision, had it been proved that the interception of ground water by the tunnel would have substantially injured holders of rights on a stream fed naturally by that ground water so developed?

It is believed, in short, that the general applicability of the rule of ownership of tunnel water developed on one's land, if it be regarded that a rule was acknowledged in the *Hawaiian Commercial & Sugar Company* case, is open for further interpretation.

Apparent Effect of the Early Decisions

None of the principles suggested or acknowledged in these four early decisions have been specifically repudiated by the supreme court with respect to nonartesian waters. The treatment of two of the cases in a much later case involving artesian waters tends to cast doubt upon the stability of the principles as applied even to nonartesian waters, and this matter is considered hereinafter following the discussion of the artesian-water cases (see pp. 186-190, particularly pp. 189-190). But summing up these four decisions alone, as being the only ones rendered down to the early part of the present century that bear upon this subject, it appears that (1) no one of them actually adjudicated rights in nonartesian waters as between owners of land overlying a common body of such water; (2) none of them actually adopted any particular doctrine with respect to the use of nonartesian waters; (3) the two earliest ones questioned the possibility of the vesting of "rights" in such waters; (4) the purport of three of the cases is to the effect that ground waters are not legally tributary to springs unless proved to be flowing thereto in defined channels, and hence that "percolating" waters are not legally tributary even though physically tributary, but there was no proof in any of them that "percolating" waters actually were physically tributary to the springs; and (5) one of them acknowledged that the owner of land owned the tunnel waters that such owner had developed on such land, but the ownership so acknowledged by the court was "undisputed," that is, presumably, not disputed by the other party to the litigation.

Even aside from any doubt cast upon any of the cases by the court's later treatment, it would appear, then, that these earlier decisions have not had the effect of firmly establishing rules with respect to "rights" in nonartesian percolating waters, as against others who either own lands overlying the same waters, or who hold established rights in sources of supply fed by such waters. Rather, the more conservative view of these cases is that they suggest the course that might have been followed at such times, had the ground waters been shown by the evidence to be physically common to two or more separate ownerships of land, or tributary to a source or sources of water supply claimed by others, and had it been necessary to adjudicate the question of rights to the use of the ground waters in litigation.

[B] ARTESIAN WATERS

Questions involving artesian waters have been decided in several cases in the supreme court, and in one of them the fundamental nature of the right of ownership and use of artesian water was passed upon. This case decided that the Territory is not the owner of all artesian waters, but that property rights in such waters have vested in common in the owners of overlying lands. The rights of such co-owners as against each other were not passed upon in detail; but a broad principle was stated to the effect that all such co-owners in a given artesian area have "correlative" rights in the common body of artesian water, and that each one is entitled to a reasonable use of the water with due regard to the similar rights of his co-owners, and is limited to a reasonable share of the water in time of actual or threatened shortage of the water or deterioration in its quality.

Cases Involving Artesian Waters but Not Fundamental Rights of Use

The use of water from artesian wells has been involved in some cases dealing with the construction of land leases, as noted heretofore (see p. 124). The first two of these decisions, which were rendered in a series of controversies between the same parties, contained no discussion of the nature of the right to use water from an artesian well on one's land.[44] The questions regarding use of artesian water were primarily as to what water was granted by the lease, and as to the method by which part of the leased water should be furnished to the lessor.

Another controversy involved a question as to whether the surplus water from an artesian well passed by a lease of the land on which the well was located.[45] The decision turned on the construction of the lease, as interpreted in the light of the apparent intent of the parties, and not on the nature of an artesian water right. However, some question seems to have been raised in the mind of the dissenting justice as to the implications in the principal opinion with respect to the ownership of the surplus water yielded by the artesian well. Chief Justice Robertson stated in his dissenting opinion (at p. 674): "That the surplus water did not belong to the land on which the well is situated and did not pass by the demise of the land because not mentioned in the lease seems to be the position taken in the latter part of the prevailing opinion." The right to take water from a flowing well might be separated from the title to the land by grant or reservation by the owner, he stated, but until severance of title the water would remain part and parcel of the land and would pass in a conveyance without mention of the water. However, Justice Coke apparently disagreed with this interpretation of the prevailing opinion, for he stated in a brief concurring opinion (at pp. 669-670): "I do not understand that the opinion goes to the extent of holding that the surplus water from an artesian well does not belong to the land on which the well is situated or that upon a conveyance of the land that all the water, in the absence of an exception or reservation of a part thereof, would not pass to the grantee." He was convinced as to the "clear intent and understanding of the parties" that the surplus waters be excluded from the operation of the lease, and based his concurrence upon that.

[44] *Richards* v. *Ontai*, 19 Haw. 451, 453-454 (1909); *Richards* v. *Ontai*, 20 Haw. 335, 340-342 (1910; submission upon agreed facts).

[45] *Tsunoda* v. *Young Sun Kow*, 23 Haw. 660 (1917).

Up to the time of rendering the decision in the *City Mill Company* case, discussed immediately below, there appears to have been no decision of the Supreme Court of Hawaii with respect to the fundamental character of the right to divert artesian water occurring under one's land. The question of implications in the *Tsunoda* case seems to have been disposed of by the concurring opinion of Justice Coke and by the wording of the syllabus by the court, which says nothing as to the nature of the "ownership" of artesian water found under one's land.

The City Mill Company Case, Defining the "Ownership" of Artesian Waters

The decision in this case[46] is believed to be of such importance in the water law of the Territory, and particularly with respect to the ground-water supply of the City of Honolulu, as to warrant a rather full presentation. The opinion of the court is 35 pages in length. There was no dissenting opinion. No appeal was taken from the decision to the Federal courts, and no subsequent decision of the Territorial court upon the points of water law involved in this case has been reported.

Process and Facts

The case came to the supreme court on appeal from a ruling by the Honolulu Sewer and Water Commission, denying an application of the City Mill Company for a permit to drill a new artesian well upon property owned by it within the District of Honolulu.

The Honolulu Sewer and Water Commission was created in 1925 for the purpose of planning and constructing a sewer and water system in the District of Honolulu (see p. 227, below; this commission was the predecessor of the present Board of Water Supply). An act of the legislature in 1927[47] extended the investigational powers of the commission and gave it extensive control over the development and use of artesian water within its jurisdiction. This act did not specifically declare an emergency; but it recited, in a preamble, a representation made by the commission in its report to the legislature, that unless the limited water resources in the district were carefully conserved and economically administered they would soon become inadequate, and that the health and public welfare would require the imposition of governmental control over the water resources of the district "as soon as practicable." In carrying out the commission's recommendation, the legislature provided, among other things, that it should be unlawful for any person to install a new artesian well in the district, or to reopen an artesian well that had been unused for two years or more, except under a permit granted by the commission. The commission was authorized to deny an application for a permit if in its opinion "the proposed work would threaten the safety of the water of the artesian area or basin which would be drawn upon by such well, by lowering its level or increasing the salt content of any existing well or wells," subject to an appeal directly to the Supreme Court of Hawaii. The commission was authorized to make rules and regulations for the appropriate exercise of its powers.

Under the Act of 1927 the appellant company applied for a permit to drill a new artesian well. The water was to be used for domestic purposes

[46] *City Mill Company* v. *Honolulu Sewer & Water Commission*, 30 Haw. 912 (1929).
[47] Sess. Laws Haw. 1927, Act 222.

in certain buildings belonging to the applicant near the well to the extent of approximately 1,221,000 gallons per month. According to the petition for the permit, this was the amount then being supplied to these buildings from the city mains. The chief engineer of the commission recommended that, for several reasons, the application be denied, and at the conclusion of a hearing the commission denied the petition. The reasons for denying the application, as summarized by the court in its opinion, were, "not because the specifications offered by the applicant for the drilling and maintenance of the well were unsatisfactory to the commission, but because the commission believed that from the artesian basin which the proposed well would tap more water is already being drawn by existing artesian wells than is filtering into the basin by natural processes and that the opening and use of a new well would tend to further deplete the artesian supply and to threaten such an increase, in a few years, of the salt content of all of the artesian waters of the basin involved as to make them non-potable."

The applicant appealed to the supreme court from this ruling. The supreme court reversed and set aside the decision and order of the commission. It was stated that an order would be signed on presentation, directing the commission to grant a permit to the applicant as prayed for, upon such reasonable specifications and regulations concerning the boring and maintenance of the well as might be prescribed in accordance with law.

Principles Announced by the Court

The principles announced in this decision, and the reasons upon which they were based, may be summarized as follows:

(1) The question as to whether the Territory might, without compensation to the applicant for a permit, prohibit the boring of any new well while at the same time leaving all users of existing wells to draw water therefrom, was an entirely new one in the Territory (at p. 922).

The question had never before received judicial consideration or adjudication.

(2) The Territory, as owner of specific lands overlying an artesian basin, has the same rights in the artesian waters as any private owner would have, but does not own all of the artesian waters in the Territory (at p. 934).

The king was originally the sole owner, but when land tenures became vested in individuals in place of the king, the ownership of ground waters that were a part of the land passed, as a part of the lands themselves, from the king to the individual landowners. In the issuance of land commission awards, confirmed by royal patents, "all mineral or metallic mines" were reserved to the government, but there was no reservation whatever of subterranean waters.

(3) If the doctrine of ownership of ground waters favored in this case is, as the court believes, the correct one, this has been so since the establishment of titles in individuals (at pp. 934-935).

If the awardees and patentees of land became the owners of the subjacent waters, as the court stated they did, courts would not be justified, simply because of the supposed necessity of protecting the potability of the waters, in announcing a radical alteration in their conception of the law of such waters.

(4) The so-called common-law doctrine of absolute ownership of waters underlying one's land is unsound, particularly as applied to artesian waters (at pp. 922-924). It has never been the rule in Hawaii with respect to artesian waters (at pp. 936-938), and the court is not required to adopt it by virtue of the legislative adoption of the common law of England (at pp. 938-944).

This doctrine purports to be based upon the ancient maxim *"cujus est solum, ejus est usque ad coelum et ad inferos,"* or "he who owns the land is the owner of it, even to the heavens above and to the lowest depths below." This principle may or may not be applicable to waters "merely oozing in or seeping through soil," but it certainly runs counter to the facts when applied to an artesian basin, which is never found, complete within itself, under and within the boundaries of a city lot.

Davis v. *Afong*[48] and *Wong Leong* v. *Irwin*[49] cannot properly be regarded as indicating that the Supreme Court of Hawaii prefers this doctrine. These cases were distinguished on their facts. Neither one can be regarded as authority on the subject of artesian waters. There was no ancient law or usage in the Islands relating to artesian waters, the first artesian well having been installed in 1879.

Section 1 of the Revised Laws, adopting the common law of England in all cases except as otherwise expressly provided by the Constitution or laws of the United States, or by Territorial laws, or fixed by Hawaiian judicial precedent or usage, does not require the court to adopt the so-called common-law doctrine of absolute ownership of percolating waters. The earliest English decisions on the subject were not rendered until near the middle of the nineteenth century. There was no ancient common law on this subject, and it is a misnomer to speak of the absolute-ownership rule as "the common-law rule," for there was none such. (See ch. 4, p. 97, concerning this point.) Nor did these early English decisions deal with artesian waters.

(5) The court believed that the "doctrine of correlative rights" is the correct one (at pp. 922-933). Accordingly it was held, with reference to artesian waters, in the language of the syllabus by the court, that: "The owners of various pieces or parcels of land under which there is an artesian basin are the owners of the artesian waters of the basin. As such owners they have correlative rights therein. Each is entitled to a reasonable use of the waters with due regard to the rights of his co-owners in the same waters." But there was no necessity, in this case, of stating with exactness the precise principles that should govern the admeasurement of the share of each co-owner (at pp. 933-934).

The court outlined three doctrines bearing "more or less directly on this subject," which had been referred to in court decisions and in texts as "the common-law doctrine," "the reasonable use doctrine," and "the rule of correlative rights." The so-called common-law doctrine, or rule of absolute ownership, was dismissed as basically unsound. Then followed 8 pages of quotations from texts and from decisions in American cases, purporting to show the development away from the early concepts and toward the recognition of correlative rights in ground waters, and the superiority of this rule.

[48] 5 Haw. 216 (1884).
[49] 10 Haw. 265 (1896).

Many of the latest American decisions, it was said, "with particular reference to artesian wells in the same basin, favor the doctrine of correlative rights." The court thought that all the owners of all of the many portions of an artesian area should be regarded as co-owners of the waters of the basin; that their rights are correlative; and that in time of real or threatened scarcity of water, or deterioration in quality of the waters, no one should be authorized to take more than his reasonable share. This view, the court thought, "most nearly effectuates justice and coincides with early concepts of the law as to the ownership of the soil and all within it."

A general declaration of the principle of correlative rights of co-owners was considered sufficient for a determination of this case. The sole question for determination was whether the community as a whole could, without compensation, decree that no further artesian well should be dug in the basin. The rights of owners of the overlying lands as against each other were not in issue, hence there was no necessity of formulating rules by which the share of each co-owner should be measured.

(6) The legislative act in question contained no finding or declaration that an emergency existed, and the record did not show one. But irrespective of the existence of a supposed emergency, private water rights cannot be deliberately confiscated for community use in times of peace (at pp. 935-936).

The court apparently was skeptical as to the existence of an emergency. A paragraph in the opinion was devoted to a discussion of the Honolulu water supply and of the existence of large quantities of water elsewhere on the island, in part, at least, in private ownership. These waters, it was stated, are legally available to the people of the community by the exercise of the right of eminent domain. The fact of high cost, it was said, did not support the claim of an emergency in the face of the availability of other water supplies; nor did it justify resort to the extreme power of confiscation, if it existed, and the court did not think that it existed.

Nor did the existence of a supposed emergency justify, in times of peace, the deliberate confiscation of the water rights of individuals simply because the community as a whole needed the water, if it did need it. The Constitution of the United States, in language that would seem to be unambiguous, forbids it. This prohibition "covers the case of a pressing need, as well as the case of a lesser, ordinary need." It is fair, as the Constitution requires, that the community should pay for private property taken for community purposes.

(7) The police power of the Territory extends to the prescribing of reasonable regulations governing the installation and maintenance of private artesian wells, to the end that the safety and the health of the community may be protected and the rights of co-owners of the waters of the same basin preserved from violation (at pp. 944-947).

The question of "regulation" under the police power was not in issue in this case. However, the court went into the question. It was stated that, while individuals may own rights in the whole or a part of the waters of an artesian basin, much might be done under the police power to regulate the exercise of those rights in the interest of the public welfare; and decisions of the United States Supreme Court were quoted to support the statement. The syllabus by the court states that this power exists with respect to "rea-

sonable regulations for the boring and the maintenance of artesian wells on the lands of private owners." But the power to do this was expressly admitted by the appellant; and the court itself stated that this was not a controversy concerning the power to regulate or (at p. 922) concerning the extent to which that power might be exercised in connection with the installation or the operation and maintenance of artesian wells.

(8) The police power of the Territory does not extend to the prohibition of installation of a new well in an artesian basin, while permitting others to continue the operation and use of their existing wells without diminution. Therefore, the portion of the legislation that sought to authorize this prohibition was to that extent held unconstitutional and invalid (at pp. 946-947).

However broad and far-reaching the police power, it could not be deemed to justify the prohibition sought to be enforced, under the showing made in this case. The use under the proposed well of appellant would be about one-half of 1 percent of the total existing draft upon the artesian basin. Any noticeable increase in the salinity of the water had been caused by the users of existing wells—not by appellant, for its well had not been installed. The remedy for any threatened increase of salinity was by a lessening of existing uses, not by wholly preventing appellant from having its reasonable share of the water. Whether conditions were yet so serious as to justify a requirement by the Territory that appellant, after installing its well, and all owners and users of existing wells, use less water than needed or desired, need not yet be determined, for no effort had been made by or on behalf of the Territory to resort to any such remedy. "All that need be now said is that it would be abhorrent to a sense of justice and violative of the appellant's rights as a co-owner of the waters in the artesian basin to prevent him from using any of the waters of that basin while at the same time to permit an unrestrained use of the same waters by others of his co-owners."

Hence section 5 of the Act of 1927, insofar as it sought to deprive any co-owner of the waters of the artesian basin, without due compensation, of his right to share in the artesian waters, was held violative of the United States Constitution and therefore invalid.

Adoption of the "Correlative Doctrine"

The question of the right of the public to prohibit a landowner from using the water occurring under his land was a new one in Hawaiian jurisprudence. The court stated that there was no ancient law or usage in Hawaii with respect to artesian waters, and considered two previous decisions and dismissed them as not bearing upon the question. The court was convinced that all ground waters were not the property of the public or of the Territory, and based its conviction upon the view that the ownership of the ground waters subjacent to tracts awarded to individuals, passed to the individuals with title to their lands. The City Mill Company, therefore, had acquired property rights in the artesian waters subjacent to its land.

The conception of private ownership of artesian waters, by the owners of overlying lands—or at least, private ownership of rights of use of the water, inherent in the ownership of the land—was the basis of the decision

that the Territory could not take away that property right without compensation. This concept was a prerequisite; it obviously was necessary to the decision. The court, in other words, laid down a rule of law in stating that the City Mill Company had a property right with respect to the use of artesian water occurring under its land.

In arriving at the nature of this private property right, for the purposes of the case before it, the court made a selection from among rules that had been stated in English and American decisions. It selected what it thought to be the correct rule, "the rule of correlative rights," and supported its position with extensive quotations from Eastern and Western decisions and from two texts. One of the texts quoted was a Western work,[50] but only two Western cases were mentioned in the opinion. One of these was the Washington case of *Patrick* v. *Smith,*[51] from which a quotation was taken to the effect that the principles of natural justice and equity demanded the recognition of correlative rights in percolating waters. Since the date of the *City Mill Company* case, the Supreme Court of Washington has rendered a decision[52] that purports to follow *Patrick* v. *Smith,* but which, in the present writer's opinion,[53] is clearly a departure from the correlative principle stated in that decision and quoted by the Hawaii court. Several quotations strongly favoring the correlative doctrine were also taken from the Utah case of *Horne* v. *Utah Oil Refining Company,*[54] the other Western case mentioned in the opinion. As the matter now stands, this case represented only an intermediate step in the progressive development of Utah ground-water law and is no longer authority in that State; for since the rendering of the *City Mill Company* decision the Utah Supreme Court has repudiated the correlative doctrine in favor of the doctrine of appropriation as applied to artesian waters,[55] and the Utah legislature has since extended the appropriation doctrine to all waters above or under the ground.[56] No decisions of the Supreme Court of California were quoted from, or even cited, in the *City Mill Company* case. Yet California has had far more cases on ground waters than any other Western State, and its supreme court was the first in the West to repudiate the rule of absolute ownership. Furthermore, the correlative doctrine has been before the appellate courts of that State over and over again, on one point or another, and has been developed and applied much more extensively there than in any other jurisdiction with the decisions of which the present writer is familiar. The correlative doctrine is the law in California, and has been so for the past 40 years.

It would seem that the court, quite as readily, could have chosen the rule of absolute ownership, so far as its own precedents were concerned, and on that basis could have reached the same conclusion with respect to the uncon-

[50] Kinney, C. S., "A Treatise on the Law of Irrigation and Water Rights," 2d ed., vol. II, secs. 1173, 1174, and 1192 (San Francisco, 1912).

[51] 75 Wash. 407, 134 Pac. 1076 (1913).

[52] *Evans* v. *Seattle,* 182 Wash. 450, 47 Pac. (2d) 984 (1935).

[53] The effect of this decision upon the correlative doctrine in Washington is discussed in: Hutchins, Wells A., "Selected Problems in the Law of Water Rights in the West," U. S. Dept. Agric. Misc. Pub. No. 418 (1942), pp. 263-264. The Washington legislature enacted a ground-water appropriation statute in 1945 (see footnote 62, p. 197, below).

[54] 59 Utah 279, 202 Pac. 815 (1921).

[55] *Wrathall* v. *Johnson,* 86 Utah 50, 40 Pac. (2d) 755 (1935); *Justesen* v. *Olsen,* 86 Utah 158, 40 Pac. (2d) 802 (1935).

[56] Utah Laws 1935, ch. 105, amending Rev. Stats. 1933, sec. 100-1-1. (See Utah Code Ann. 1943, sec. 100-1-1.)

stitutionality of the legislation. In fact, after outlining briefly the three doctrines of ground-water law, the court referred to a "fourth possibility" to be found in the claim that the Territory owned all the artesian waters, and then said that a "fifth possibility" suggested itself for consideration, namely, that "conceding that the owners of the land are, under either the first, second or third doctrines, the owners of the artesian waters subjacent thereto," nevertheless the Territory might now "confiscate" all of the artesian waters "for the use of the community in general and without compensation to the original owners."[57] But having decided that the Territory was not the owner, and that the absolute-ownership rule on the part of private landowners was inapplicable on practical considerations, the court selected the correlative rule.

Whether or not it was necessary to the determination of this case that the court should have defined the nature of the landowner's ownership of subjacent artesian water, rather than simply finding that a right of private ownership existed, the fact remains that the correlative doctrine was specifically adopted with reference to artesian waters and the correlative right defined in broad terms, and that a rule of water law of fundamental importance was thus stated.

Prior to this decision of March 25, 1929, the basis of the right to use artesian waters had never been specifically decided, and the only references appear to have been in cases involving leases, in which there was no real contest over the nature of the right (see p. 178, above). Such rights, by this decision, were declared to exist in the owners of overlying lands. Furthermore, these rights were made, in substance, to relate back to the passing of original land titles to individuals; for the court said that if the correlative doctrine was the correct one, it had been so since that time. Thus, in declaring the existence of this property right, the court introduced into Hawaiian water law an entirely new principle.

Precise Relationships Between "Co-owners" of Artesian Waters Not Defined

The extent and characteristics of the rights of co-owners, other than being "correlative" and inhering in the owners of overlying lands, have not yet been defined by the court. It was not necessary to do so in this case, for there was no controversy between co-owners.

However, the court made some general comments on these relationships. In its first reference to the correlative rule as developed on the mainland, the court stated (at p. 923) that under this rule each owner of land overlying an artesian basin might use water therefrom so long as he did not injure thereby the rights of others; that in times when the water was not sufficient for all, each would be limited to a reasonable share of the water; and that under this rule "a diversion of water to lands other than that of origin might, perhaps, be permitted under some circumstances and not under others and certain larger uses, as for industrial purposes, might, perhaps, not be permitted on even the land of origin under some circumstances while being permitted under others."

The court does not suggest at any point in its opinion that the water, in time of shortage, should be apportioned on an acreage basis or on any other specific basis. The acreage criterion was used by way of illustration in the

[57] The two "possibilities" were ruled out, as above stated.

argument leading to the conclusion that all landowners are co-owners of the waters, thus (at pp. 924-925) :

> If a person or other entity should purchase all of a large tract of land under which an artesian basin exists, it would be easy to take the view, we think, that that owner of the land would be the sole owner of the water underneath it. If two persons or other entities should purchase each a half of that tract it would seem to be equally fair and rational to regard the two owners of the land as owners in equal shares of all of the waters. Why not, upon the same reasoning, regard all the owners of all of the many portions of such an area as co-owners of the waters of the basin? We think that they should be so regarded and that this is the view that most nearly effectuates justice and coincides with early concepts of the law as to the ownership of the soil and all within it. * * *

However, this conclusion is followed shortly by a statement that each landowner is limited to a "reasonable share" of the water in times of threatened scarcity or deterioration in quality of the supply. Furthermore, the syllabus by the court states that each owner is entitled to a "reasonable use" of the waters with due regard for the rights of his co-owners.

It seems clear that any general observations in this opinion as to interrelationships, beyond the matter of "reasonable share" of the water, were intended to be no more than explanatory of the doctrine, and that the court was being careful to refrain from committing itself in advance as to the specific criteria that should govern these relationships in times of danger to the quantity or quality of the artesian supply. As stated (at p. 933) : "Those principles will have to be considered and declared whenever such a question arises."

"Reasonable use" is subject to widely varying interpretations. Obviously, it cannot be defined with mathematical precision, in terms of uniform application. Generally, as it has come to be considered in water cases on the mainland, reasonable use is measured by all the circumstances of the particular controversy, and thus it may vary from place to place and even, in a given place, from time to time.[58]

What the Case Actually Decided

This case actually decided that the Territory was not the owner of all of the artesian waters in the basin, but that all owners of overlying land had property rights in the use of the artesian waters by virtue of their land ownerships, which property rights the Territory could not take for the use of the community in time of peace without making due compensation to the landowners, regardless of the existence of a supposed emergency.

Status of the Law of Ground Waters

Waters flowing in definite underground streams have been differentiated in the cases from other ground waters, and apparently are considered to be subject to different rules of law. Just what are the rules with respect to definite underground streams, has not been fully stated, but the

[58] "What is a beneficial use, of course, depends upon the facts and circumstances of each case. What may be a reasonable beneficial use, where water is present in excess of all needs, would not be a reasonable beneficial use in an area of great scarcity and great need. What is a beneficial use at one time may, because of changed conditions, become a waste of water at a later time." *Tulare Irrigation District* v. *Lindsay-Strathmore Irrigation District,* 3 Cal. (2d) 489, 567, 45 Pac. (2d) 972, 1007 (1935).

assumption is that such waters would be considered to be legally tributary to sources of supply to which they are proved to be physically tributary. As to other waters in the ground, the court has stated, in dealing with nonartesian waters, that rights do not attach to "percolating" waters, and in a case involving artesian waters, that rights of ownership therein and use thereof under the "correlative doctrine" vest in the owners of overlying lands.

The Question of "Rights" in Nonartesian Percolating Waters

The *Davis, Wong Leong,* and *Palolo* decisions do not in terms adopt the *"cujus est solum"* doctrine, the so-called "common-law doctrine" of absolute ownership, under which the owner of land is deemed to be the absolute owner of even the corpus of the percolating water in his land; nor do they say that such waters are in the "negative community." They simply purport to deny the existence of "rights" in such waters. Nor does the decision in the *Hawaiian Commercial & Sugar Company* case refer to this doctrine in connection with the statement of ownership of tunnel waters; it simply acknowledges an ownership that was not disputed in the case, and without citation of authority or giving any reason for the basis of an unqualified right of ownership.

If the statements in these decisions are to be taken at face value, and if no system of water rights should be recognized in nonartesian ground waters underlying several tracts of land unless the waters are proved to be flowing in defined and ascertained channels, then the effective utilization of this great natural resource could be undertaken only under great hazards, because development predicated upon the diversion of water at a given point could have no protection against impairment of the common water supply by diversions made on other lands overlying the same body of ground water. The same practical result, of course, would follow from the adoption of the *"cujus est solum"* doctrine, for while under such doctrine the landowner "owns" even the corpus of such water while it is in his land, he has no right—and he obviously could have no right—to the continued flow of the water into the substrata of his land from that of some other owner's land. It is only while the water is within his property that he "owns" it and therefore has any "right" in its use.

However, it is not believed that the statements in these decisions necessarily have this sweeping effect. The question of rights in such waters was not actually adjudicated, in these cases or in any other supreme court case, as between owners of lands overlying a common body of nonartesian water, and the decisions do not relate to nonartesian waters that, so far as any opinion of the court discloses, were actually proved to be physically tributary to other sources of supply. It would seem that these decisions, at the most, can be taken to represent an early phase of the development of ground-water law in Hawaii in which principles were discussed with reference to one point or another but were not crystallized into settled rules of law.

The treatment of the rule of absolute ownership in the *City Mill Company* case in 1929 indicates that at that time the court had little sympathy with the absolute-ownership rule in general. The repudiation of that rule

was made to apply only to artesian waters, which were the only waters directly in controversy, and therefore is not an express repudiation of the rule as applied to nonartesian waters, rights to which were not in issue. However, in reaching its decision as to the rule that should be adopted with respect to the waters of an artesian basin, the court stated that the absolute-ownership rule had not been adopted as to artesian waters in previous Hawaiian decisions; that the absolute-ownership rule was not the "common-law rule"; and that the court was not required "to adopt and enforce the so-called 'common-law doctrine'" by virtue of the statutory adoption of the common law in Hawaii (at pp. 936-944). The following paragraph from the decision well summarizes the view of the court as to the physical inapplicability of the absolute-ownership rule to waters that pass freely from the substrata of one tract to those of another (at pp. 923-924):

> The so-called "common-law doctrine" seems to us to be unsound. It purports to be based upon the ancient maxim, *"cujus est solum, ejus est usque ad coelum et ad inferos,"* or "he who owns the land is the owner of it, even to the heavens above and to the lowest depths below." From that beginning it proceeds upon the theory that the water found in the land is a part of the land. When applied, however, to an artesian basin and to artesian wells, this view runs clearly counter to the facts. It may, or it may not, be applicable to waters merely oozing in or seeping through soil, but it certainly is not applicable to artesian waters which are known to flow freely and rapidly through broken rock or other materials permitting of easy passage. No artesian basin is ever found, complete in itself, under and within the boundaries of any one person's city lot. They exist usually, and the particular basin under consideration in the case at bar exists, subjacent to large areas of land,—hundreds, and perhaps thousands, of acres. It cannot be said with any regard for the truth that an owner of a city lot or other small portion of the land over an artesian basin who, with a powerful pump takes from his artesian well all of the water that can thus be obtained therefrom, is thus drawing only water which is a part of his own soil or land. The water of the whole basin will unavoidably flow towards its lowest level, that is, where the greatest suction is being applied. To permit an owner of a comparatively small portion of the land to draw water therefrom without limit would be to permit him to take water which clearly was subjacent in a large degree to the property of others.

It is true that in this case the court was stressing the matter of truly artesian waters, that is, waters that in their scientific acceptation are artesian; and, indeed, it was artesian waters and artesian wells that the controversy was about. The statement of facts in the opinion is followed by a paragraph (at pp. 921-922) outlining the "present generally accepted theory" with reference to artesian waters, including the feature of confinement within a pervious stratum lying "between two impervious strata, one above and one below, and * * * blocked in at the seaward end with a wall of impervious material," and the rise of the water in a well drilled through the upper stratum into the underlying stratum of pervious water-bearing material. Throughout the opinion the court clearly is thinking of waters of the character known to exist under the bodies of caprock that occupy portions of the coast of Oahu; but the further facts are not developed, that the pervious strata containing these waters are not overlain by caprock in all places, that portions of the common supply of water within

them are not "artesian" waters, and that elsewhere there may exist waters in equally permeable rock bodies that are not under artesian pressure.

Granted that in the foregoing quotation the court was distinguishing solely the waters of an artesian basin from those "merely oozing in or seeping through soil," nevertheless if the scientific meaning of "artesian" be disregarded for the moment, the comments would apply with equal force to the great bodies of basal nonartesian water that underlie much of the surface areas of these islands, as well as to many bodies of high-level water. The court obviously was concerned with the interrelationships of portions of a common supply underlying different ownerships of land. In this case this common supply was under artesian pressure. Under other circumstances a common supply not under artesian pressure is affected by the withdrawal of water "with a powerful pump" that takes out water not only subjacent to the tract on which the pump is located but also from under land in other ownerships as well. The height of the water table and the safe yield of a common ground-water supply are affected by heavy withdrawals at various points, whether or not the waters in scientific terminology are "artesian" waters. If the *"cujus est solum"* doctrine is not a practicable rule to apply to the waters of an artesian basin, then it is not practicable with respect to many bodies of ground water in Hawaii that are not under artesian pressure.

Bearing in mind always that the court in the *City Mill Company* case was not passing upon the question of rights in nonartesian waters, its disapproval of the rule of absolute ownership with respect to ground waters of considerable extent, and the characteristics of which are capable of determination, seems to be clearly implied. Even with regard to "waters merely oozing in or seeping through soil"—whatever that may be taken to mean—the court seems to be expressing at least a doubt in its statement that the absolute-ownership rule "may, or it may not, be applicable." This statement, although not necessary to the decision, hardly seems to be consistent with a belief that that rule with respect to "merely oozing" or "seeping" waters had been firmly established in Hawaii, if the court had held such belief. The *Davis* and *Wong Leong* cases were considered, in view of references thereto by counsel as possibly indicating that the court preferred the absolute-ownership rule, but were distinguished on their facts. One of the attorneys in the *Davis* case, it was said, had spoken of the fact that some of the water involved passed by subterranean percolation from one spring to another, but the decision in that case was stated by quoting from the syllabus, which contained no reference to either artesian or nonartesian waters, only "water from springs on the land." The entire statement in the *Wong Leong* opinion concerning ground waters was quoted, and it was then said that the general statement therein as to rights in subterranean waters must be read in the light of the facts, this being a case "merely of seepage from taro patches on one land to a spring on another land." The actual conclusion was that neither of these cases could be regarded as authority on the subject of artesian waters. The court did not say that they were not authority on the subject of nonartesian waters, or of percolating waters generally; but the treatment of these cases and of the ground-water principles considered therein could have been followed

without change, had it been sought to distinguish them from a case involving a large body of nonartesian water.

Certainly, the treatment of ground-water law in the *City Mill Company* case does not strengthen the view apparently expressed in earlier cases that "rights" do not obtain with respect to nonartesian percolating waters. Rather, it seems to cast some doubt upon the validity of an assumption that that principle had been well established. The reasonable conclusion appears to be that the question of the ownership and rights of use of nonartesian percolating waters has not been settled.

Correlative Rights in Artesian Waters

So far as artesian waters are concerned, the supreme court adopted the "doctrine of correlative rights" in the *City Mill Company* case, and has rendered no later decision with reference to such waters. This principle has its roots in the conception of ownership of the waters of an artesian basin by the owners of the overlying lands, whether such lands be in public or in private ownership, but it is a departure from the *"cujus est solum"* doctrine in that it recognizes this ownership as coequal and correlative, not absolute. This decision expressly repudiates the concept of public ownership of all artesian waters in the Territory.

The precise relationships between the co-owners of lands overlying an artesian basin, with respect to the use of the common water supply, have not yet been defined, but were left for consideration in a future case in which the question should be specifically in issue. That is, the correlative relationship implies the right of use by any one co-owner of a share of the common water supply in relation to like reasonable uses on the part of all his co-owners, but the actual measure of such reasonableness has not been formulated.

Nor have the relationships between the owners of lands overlying an artesian basin, and claimants of the rights of use of nonartesian waters that are essentially part of the same water supply, been formulated. The question was not even suggested in the *City Mill Company* case. In view of the physical situation that prevails on Oahu, and to some extent elsewhere, it seems obvious that this relationship is a most important one; for heavy withdrawals of basal nonartesian waters that feed an artesian area would necessarily affect the water supply of such area. (See pp. 151, 156, 165, and 198, in this chapter.)

Criticism of the Correlative Doctrine

It was probably natural that the Territorial court in the *City Mill Company* case should have selected the correlative doctrine from among those ground-water rules to which it had access in the texts and reported decisions, for this rule of ownership of ground water appeared to be a marked advance over the rule of absolute ownership, and its weaknesses as developed in practice had not been brought out in the texts and decisions then available. Nevertheless, in adopting the correlative doctrine, the court squarely overruled a legislative effort to establish effective public control, in the interest of the general welfare, over artesian waters within the Honolulu District, owing to the court's views that these waters were

in private ownership and that much could be accomplished under the police power in controlling their use. The difficulty is that the emphasis placed in the decision upon the essentially private ownership of these waters, whether or not it is *stare decisis,* placed a considerable obstacle in the way of accomplishing later the objective that the legislature then had in mind.

The most serious criticism of the correlative doctrine is that it does not afford complete protection against overdevelopment of and consequent injury to the common water supply. Nor, while it purports to apportion the benefits of a ground-water supply equitably among all owners of overlying land, does it necessarily result in equity to the several water users, particularly to those who in good faith may have developed water in excess of a theoretical "reasonable share," the extent of which they may have had no practicable means of even estimating. As applied to conditions in the Islands, the correlative doctrine is not believed to be the best method yet devised for an agricultural area, and particularly does it seem ill adapted to the requirements of a great metropolitan area such as the District of Honolulu. The appropriation doctrine has been adopted in several Western States for the utilization of ground waters as well as surface waters, and it appears, from the limited experience thus far available with respect to ground waters, to be a better medium than any doctrine of private ownership for effectuating the best utilization of this important natural resource.

The Question of Overdevelopment

Various references in this discussion of Hawaiian ground-water law have been made to conditions on the mainland, but it seems necessary to do this, for most of the controversies have occurred and most of the experience has been obtained there. Furthermore, the correlative doctrine was borrowed directly from decisions in the several States.

Experience on the mainland has shown clearly that the correlative doctrine has not solved the serious problem of overdevelopment of ground water in areas in which the total demands exceed the available supplies. This fact has come to be increasingly appreciated and has caused many discussions of the problem and of how to meet it. The situation is well summarized in the following paragraph from an excellent paper, presented before the American Water Works Association in 1938, which discussed the application of doctrines of ground-water law and methods of control, effected or attempted, in various Eastern and Western States:[59]

> Conditions could be cited in a number of States where it is exceedingly desirable that some limitation be placed on consumption before a valuable natural resource is largely destroyed. It appears that the doctrines of reasonable use and correlative rights, at least as recognized thus far, do not afford any hope of bringing about the desired control. The question arises as to what effective measures can be taken. This question has been considered by engineers

[59] Thompson, David G., and Fiedler, Albert G., "Some Problems Relating to Legal Control of Use of Ground Waters," Jour. Amer. Water Works Assn., vol. 30, No. 7 (July 1938), pp. 1049-1091, at pp. 1080-1081. In addition, see discussions in the symposium "Administrative Control of Underground Water: Physical and Legal Aspects," by Harold Conkling and others, Trans. Amer. Soc. Civ. Eng., vol. 102 (1937), pp. 753-837; Baker, Donald M., and Conkling, Harold, "Water Supply and Utilization," pp. 380-381 (New York, 1930); Smith, G. E. P., "Groundwater Law in Arizona and Neighboring States," Ariz. Agr. Expt. Sta. Tech. Bul. 65 (1936), pp. 78-81.

and geologists for many years, and it has become the conviction of an increasing number of them that the doctrine of appropriation, properly applied, offers the only satisfactory answer.[60]

Public control in the Western States has centered altogether in the appropriation doctrine. That is, in none of these States has control over uses of ground water by an administrative agency been imposed by a statute that implies recognition of rights of use inhering in owners of land under the correlative doctrine. Most of the Western States have statutes dealing with the regulation of artesian wells—some of them being similar in some respects to the Hawaii legislation discussed hereinafter (see pp. 198-204)—but that is not the type or purpose of public control that is being discussed here. Hence, mainland experience in attempting to solve the problem of correlative rights of individuals by expressly recognizing them and regulating their exercise through administrative authority, is not available.

In the absence of public regulation, the only medium for limiting the action of an individual landowner in abstracting and using the water that exists under his land, is the courts. Decrees have been rendered in many such cases, notably in California, but in most instances they have involved only a few parties, and generally they have concerned the export of water to distant lands by at least one of the parties. The decrees were rendered after the alleged injuries had occurred—not in advance in an effort to have all rights in the use of the common supply ascertained and defined. Even so, the present writer is not advised of any Western case in which there has been a complete adjudication of rights of all owners of lands overlying a ground-water supply under the doctrine of reasonable use or its correlative-rights adaptation, although it is true that a comprehensive determination is now in progress in an area in southern California.[61]

Without effective limitation by administrative regulation or by a court decree that binds a substantial proportion of the claimants, development goes on unchecked, with increasing competition for the use of the available water supply, and the inevitable result in various important localities has been overdrafts upon the supply, with serious economic consequences. Such a situation, obviously, is not in the public interest.

The legislature of Hawaii in 1927 attempted to provide a strong measure of public control over the installation of new artesian wells in the Honolulu District. (See under "Regulation of artesian wells," pp. 200-204, below, particularly p. 203.) This legislation made mandatory the obtaining of a permit from the Honolulu Sewer and Water Commission before drilling an artesian well within the district, and it purported to authorize the commission to deny a permit if the commission believed that the proposed work would result in danger to the water supply. It was this attempted authorization to a public agency, to deny a new permit while allowing existing wells to function, that was held unconstitutional in the

[60] It might have been added that there are also lawyers who agree with this conclusion; that there are other lawyers who do not agree with it; and that still others concede the premises but do not admit the legal practicability of substituting the appropriation doctrine for the correlative doctrine in a State in which the latter appears to be well established as the result of repeated court decisions.

[61] *Pasadena* v. *Alhambra,* in the Superior Court for Los Angeles County, California. Reference was made by the court, under authority conferred by the water commission act, to the State Division of Water Resources for investigation and report.

City Mill Company case as being at variance with the fundamental principle of private ownership of artesian water accorded by the correlative doctrine.

Shortly after the rendering of the *City Mill Company* decision, the legislature eliminated the provision found objectionable by the court, leaving intact the other provisions requiring the obtaining of permits. The legislature, at the same time, further amended the statute so as to authorize the commission to provide by rules and regulations for restricting the withdrawal of water from all wells supplied from an artesian area, "on a basis proportionate to the proper and beneficial uses served by them respectively," in times of actual or threatened shortage of water of such artesian area or of danger to its potability. (See p. 204, below.) This appears to have been an effort to give the commission administrative control over uses of artesian water in the Honolulu District in harmony with the principles of the correlative doctrine as adopted by the supreme court in the *City Mill Company* case. Rules and regulations reserving the right to impose this restriction have been adopted by the Honolulu Board of Water Supply (successor of the commission), but so far as the present writer is aware, the board has not yet had occasion to order a proportional limitation upon uses of water from wells within any artesian area under its jurisdiction.

The enforcement of a proportional reduction of all uses of water from an artesian supply in a period of emergency would be an effective brake upon uses of water from then existing wells that otherwise might be excessive. It would thus curtail the use of existing developments, but it would not prevent the making of new developments for the use of the threatened supply, for the board has no authority to accomplish this. As the matter stands, an owner of overlying land cannot be prevented from installing a well that conforms to the board's specifications if he chooses to do so, notwithstanding an emergency; but of course after the well is installed he may be limited under the statute to his reasonable proportion of the water, whatever that may be. Yet the use of a new well in a given part of an artesian area may be dangerous to the water supply of the area. It was the proposed installation of a well in an area in which the salt content of the water was already high, and the use of which the commission believed would threaten the water supply, that the supreme court held the commission unable to prohibit.

It would appear that in view of the limitations upon legislative and administrative authority that were imposed in the *City Mill Company* decision, the existing legislative provision for administrative control under the correlative doctrine is an important step toward meeting the problem of overdevelopment, but that it does not provide a complete solution. Furthermore, its workability apparently has not yet been tested.

The Questions of Equity to Water Users and of Stability of Water Rights

The safe yield of a ground-water supply may be, and in many cases is, inadequate for the requirements of all overlying lands, and in such case the reasonable share available to each overlying tract, if known in advance, might be so small as to discourage many from undergoing the expense of developing it. In any event, all prospective users do not initiate their developments at the same time. It happens in actual practice that certain ones put down wells and make improvements the value of which depends in

part upon the continued use of the water thus developed, and without particular thought for the fact that the quantities thus developed may exceed their theoretical "reasonable shares." As more and more wells go in, and as it becomes increasingly apparent that the total supply is not sufficient for all, existing users under the correlative theory necessarily must be deprived of a portion of their accustomed water supplies, and must suffer loss, in order that others who theretofore used no water may now have some of it.

The case of a water user who has proceeded in good faith, and who because of a legal rule is later required to abandon part of his development in favor of others, may justify some consideration. The point might be made that no co-owner has a legal right to more than a reasonable share of the water when the other co-owners choose to put down their own wells, and that therefore there is no inequity in requiring him to discontinue a use that rightfully belongs to others. However, principles of ground-water law may be adopted long after general use has been made of ground-water supplies. In Hawaii, for example, 50 years elapsed and much development of artesian water took place between the time of drilling the first artesian well and the rendering of the *City Mill Company* decision. Adoption of the correlative doctrine in a particular jurisdiction may put landowners on notice that their rights are limited to "reasonable shares," but the practical difficulty is that an individual seldom has the means of determining in advance just what will be his "reasonable share," or of even approximating it, even if he knew how it should be measured. Such a determination would involve studies of the physical characteristics of the ground-water supply and doubtless extensive economic investigations, such as ordinarily would be practicable only through the instrumentality of a public agency equipped with adequate funds to make these necessary and comprehensive studies, followed by a judicial determination of rights and by the availability of a means of effectively enforcing those rights when adjudicated.

A practical method of giving each individual, before he puts down a well, reasonable assurance of the quantitative limitations to which he will be subjected in exercising his correlative right, has not yet been provided in any jurisdiction with which the present writer is familiar. Under such circumstances, it would seem that one's action in developing a given supply of water for what then seems to be the reasonable requirements of his land, but which may turn out later to be excessive so far as the requirements of all users from the same supply are concerned, does not necessarily imply bad faith.

Aside from the matter of equity, the indefiniteness of such a water right —varying, as it does, in quantitative measure, and therefore in value, with the acts taken by others in the exercise of their similar "rights"—detracts from its stability. This matter of indefiniteness has been discussed heretofore in connection with the riparian right (see p. 97, above), and the comments made there as to the uncertainty of the extent of a riparian right would apply generally to the correlative ground-water right as well. Such a right affords the holder no assurance that he will be allowed to continue the use of all of his developed water supply, even though so far as natural causes are concerned it may continue to be available. Nor, of course, can there be stability in rights of use that attach to a water supply that is seriously threatened with depletion or with contamination through the encroachment of salt water.

Requirements of a Metropolitan Area

The relationships between individual uses of water in a great metropolitan area are considerably more complicated than in an agricultural region. In a city, water is required for the domestic and household needs of the inhabitants, for municipal and industrial purposes, for the watering of parks, lawns, and gardens, and for a measure of suburban farming. Where agricultural purposes only are involved, the water requirements of neighboring farms of the same size vary with differences in types of soil and kinds of crops, but the acre of land serves as a common starting point; but the area of land ownership is not adequate to even this extent in apportioning water according to demands throughout a municipality.

Relationships between uses of water in the Honolulu District—the city proper—not only include these variables, but are further complicated by several important facts: Five separate artesian basins underlie portions of the district, but not all of it. Part of the water served by the city (through the Board of Water Supply) is imported from high-level sources, but most of it is drawn from the artesian structure, and part of this is taken from artesian basins and part from basal water supplying certain of these basins. The municipal system now serves only about one-third of the total area of the Honolulu District. A large part of the total quantity of water used in the district (about one-third to one-half in recent years) is diverted by privately-owned artesian wells, the largest aggregate quantity being used for industrial purposes, the next largest for irrigation, and the balance for domestic purposes. There were 150 privately-owned artesian wells in the district in 1944, of which 65 were then in use (see ch. 7, p. 225).

It is thus apparent that the uses of artesian water with respect to the overlying lands in this metropolitan area form a complex structure. It is not apparent as to how the correlative doctrine, if all owners of overlying lands were to assert their rights in the artesian waters, could be applied to this structure. This, of course, is not to be anticipated, for most of the individual landowners take water from the public system. Furthermore, practical considerations would surely bar any serious effect to have the correlative rights of all landowners adjudicated in one proceeding—unless, of course, most of them were to be represented by a public entity, if it were possible to do that. Nevertheless, some practical questions suggest themselves, such, for example, as the following:

Does a landowner have a "correlative" right to withdraw water where it is *clearly shown* that such withdrawal actually will endanger the potability of the common supply, while allowing other landowners to install and operate wells in places where the supply will not be injured?

May a large number of landowners, through the medium of a public agency, divert their combined "reasonable shares" from the basal supply before it enters the artesian area, and thus impair the usefulness of diversions on lands in the lowest-lying areas?

To what extent does the rule of "reasonableness" apply to a large use of water for industrial purposes on a very small area of land in time of general water shortage?

It would seem that if the correlative doctrine is to govern uses of water as between landowners in a metropolitan area of such diverse physical and economic relationships, then its application will require the determination of

principles that have not yet been worked out elsewhere. It would further appear that unless administered by public authority equipped with a strong measure of control, the correlative doctrine is not adequate for the effective adjustment of these relationships or for the effectuation of the best utilization of the artesian water supply. As stated elsewhere, there has been no experience on the mainland by which to appraise the effectiveness of public control under doctrines of private ownership of ground water, and apparently the workability of the provision under which the Honolulu Board of Water Supply may curtail existing uses of artesian water in time of danger has not yet been tested.

Several Western States Have Adopted the Appropriation Doctrine With Respect to Ground Waters

It is not the purpose of this report to recommend any specific change in the ground-water law of Hawaii, or to discuss the legal feasibility or the practical aspects of making a specific change should it be found advisable. The purpose is to state the law as it appears to be, and to point out weaknesses that have been shown by experience elsewhere. Nevertheless, this criticism of the correlative doctrine would be incomplete without a statement of the fact that several States in the West, in which doctrines of private ownership of ground waters had not previously become so thoroughly established as to present serious constitutional obstacles, have turned to the doctrine of appropriation under State administration as offering a better answer to their ground-water problems than had been found in any rule of private ownership.

It is true that the majority of Western States in which the appropriative principle has been applied to ground water, had previously repudiated the riparian principle with respect to surface streams. However, this analogy is not complete, for in two States in which the riparian doctrine has never been recognized—Arizona and Wyoming—the courts have not rejected the principle of private ownership of percolating waters and the legislatures have not yet done so, although efforts to obtain legislative correction have been made in both States. The most effective opposition to a change to the appropriation doctrine with respect to ground waters in several of the Western States has come from vested interests, rather than from adherents to a purely doctrinaire analogy between modified common-law rights in surface streams and in percolating waters. Long and favorable experience with public control over the use of surface waters in the West under the appropriation doctrine has demonstrated the workability of that principle at least insofar as surface streams are concerned. And while as yet this procedure has been applied to the concededly more difficult problem of ground waters for a comparatively short time and in comparatively few jurisdictions, it has been shown in those jurisdictions to be workable, and it appears to be better suited to the utilization of ground-water resources than does any of the rules of private ownership.

The decision in the *City Mill Company* case was rendered at about the time that serious efforts were beginning to be made, in a number of Western States, to break away from the doctrines of private ownership of ground waters as incident to the ownership of land, and to substitute the principle

of public ownership and private rights of use based upon priority of appropriation.[62] It is true that the Hawaii Act of 1927 was not termed an appropriation statute, and it is also true that the supreme court did not discuss it from that angle; but the act did attempt to impose a system of public control within the Honolulu District that closely approaches the appropriative principle so far as the acquisition of new rights is concerned. And it was at this period that the Western efforts toward public control were beginning to show legislative results, but before there had been court decisions unqualifiedly approving the appropriative principle with respect to ground waters generally.[63]

Coordination of Rights in Interconnected Water Supplies

In several places in this chapter, references have been made to the physical interconnection of various surface and ground-water supplies, and it has been shown that in certain instances legal relationships have been established or at least recognized (see particularly pp. 164-165, above). As time goes on it may become necessary to develop more fully the principles that will be followed in adjusting rights of use as between claimants of rights in different water supplies that are shown to depend one upon the other. The coordination of rights as between associated bodies of ground water, and of surface and ground water, is a field of law that has been adequately covered in comparatively few jurisdictions. There is general agreement, for example, that the rights in a spring that is one of the sources of a watercourse are directly related to rights in the watercourse itself; but in some of the States—and in Hawaii—there has been as yet no correlation between rights in percolating waters that feed the spring and rights in the spring and the watercourse.

[62] In 1927 statutes applying the appropriative principle, under public control, to ground-water rights were enacted in New Mexico (N. Mex. Laws 1927, ch. 182) and Oregon (Ore. Laws 1927, ch. 410; see Ore. Comp. Laws Ann. 1940, secs. 116-443 to 116-453. The New Mexico act of 1927 was held unconstitutional on purely technical grounds, but the court in its decision laid the basis for an act free from the objectionable features and stated that the 1927 act, while objectionable in form, was fundamentally sound (*Yeo* v. *Tweedy*, 34 N. Mex. 611, 286 Pac. 970 (1930)). Following this decision, the present law was enacted (N. Mex. Laws 1931, ch. 131; see N. Mex. Stats. 1941, secs. 77-1101 to 77-1111).

These statutes, however, were not the first that related to the appropriation of ground water. An early law was enacted in Kansas (Kans. Laws 1891, ch. 133; see Kans. Laws 1945, ch. 390), and another in Idaho (Idaho Laws 1899, p. 380, s. 2; see Idaho Code Ann. 1932, sec. 41-103). In 1931 the Idaho Supreme Court approved the appropriative principle with respect to artesian waters (*Hinton* v. *Little*, 50 Idaho 371, 296 Pac. 582 (1931)). Nevada in 1913 made ground water subject to appropriation (Nev. Sess. Laws 1913, ch. 140, ss. 1, 2), but in 1915 passed an act providing for the appropriation of "All underground waters, save and except percolating water, the course and boundaries of which are incapable of determination" (Nev. Sess. Laws 1915, ch. 210); and in 1939 replaced the 1915 law with an appropriation act applying to all ground waters except in case of small domestic uses from nonartesian sources (Nev. Sess. Laws 1939, ch. 178; see Nev. Comp. Laws, Supp. 1931-1941, secs. 7993.10 to 7993.24).

Within the past decade, ground-water appropriation statutes have also been enacted in Utah (Utah Laws 1935, ch. 105, s. 1, amending Utah Rev. Stats. 1933, sec. 100-1-1; see Utah Code Ann. 1943, Title 100) and Washington (Wash. Laws 1945, ch. 263), and Kansas has brought such rights under public control (Kans. Laws 1945, ch. 390).

The Colorado courts apply the appropriative principle to ground waters tributary to streams (*Faden* v. *Hubbell*, 93 Colo. 358, 28 Pac. (2d) 247 (1933)), but have not yet had occasion to pass upon the status of nontributary percolating waters. The California courts, while recognizing the correlative doctrine basically, have sanctioned the appropriation of the surplus percolating waters over the needs of owners of overlying lands (*Burr* v. *Maclay Rancho Water Co.*, 154 Cal. 428, 98 Pac. 260 (1908)).

In several States vigorous efforts have been made and still are being made to enact legislation that will provide adequate public control over the exercise of rights to the use of ground waters the characteristics of which are reasonably capable of determination. The ground-water doctrines of all of the Western States, down to 1942, are discussed in considerable detail by the present author in "Selected Problems in the Law of Water Rights in the West," op. cit. pp. 146-265.

[63] See footnote 62 concerning the appropriation of certain ground waters in California and Colorado. Decisions as to this were rendered by the supreme courts of both States long before the date of the *City Mill Company* decision; but it must be recalled that in California, the appropriation of percolating waters applies only to the surplus above the reasonable needs of owners of overlying land.

And one problem that may become of practical importance in Hawaii, and that has not yet been passed upon by the supreme court, is the relation between rights in basal nonartesian water supplies, and rights in the water of artesian areas that are supplied by the nonartesian water. Along portions of the seacoasts of Oahu and Kauai, these important supplies of artesian and nonartesian water are continuous parts of one common body of ground water; and the artesian and nonartesian waters in such areas are separated from each other only by an imaginary boundary extending downward from the line at which the water table contacts the overlying caprock (see pp. 154-163, above, particularly pp. 156 and 162-163).

Regulation of Artesian Wells

General Statute

A statute providing for the regulation of artesian wells generally throughout the Territory was enacted in 1917.[64] A later statute relates to wells in the District of Honolulu, as shown below (see p. 200). The section references in the following paragraphs are to the sections in Revised Laws of Hawaii 1945 relating to the general statute.

Definition of Artesian Well

An artesian well, for the purposes of the statute, is defined as "an artificial well or shaft which is sunk or driven to an artesian stratum or basin, and through which water is raised or carried to or above the surface of the ground by natural pressure or gravity, or through which water is or may be raised or carried to or above the surface of the ground by artificial means." (Sec. 4651.)

Responsibility of Owner or Operator

The act declares an artesian well that "is not capped, cased, equipped or furnished with such mechanical appliance as will readily and effectively arrest and prevent the flow of any water from such well" to be a common nuisance. The owner, tenant, or occupant of the land upon which such a well is situated, or any person in charge of the well, who causes such common nuisance or permits it to continue, is guilty of a misdemeanor. Any such person owning, possessing, or occupying the land on which an artesian well is situated, or in charge of the well, who allows the water to flow from the well unnecessarily or to go to waste, is guilty of a misdemeanor. (Sec. 4652.) Penalties are prescribed for violations of provisions of the act. (Sec. 4657.)

Definition of Waste

For the purposes of the act, "waste is defined to be causing, suffering or permitting the water in any artesian well to reach any porous substratum before coming to the surface of the ground, or to flow from such well upon

[64] Sess. Laws Haw. 1917, Act 156. As amended, this act appears in Rev. Laws Haw. 1945, secs. 4651-4660.

This general act as passed in 1917 repealed (in s. 8) ch. 269, Rev. Laws Haw. 1915, which was originally enacted in 1884 (Laws Haw. 1884, ch. 49), relating to the capping of and waste from artesian wells on the Island of Oahu. The 1917 act was based upon recommendations made in a "Report of the Water Commission of the Territory of Hawaii (Act 36, Legislature of 1915) to His Excellency the Governor of Hawaii," dated January 13, 1917. The commission had obtained the services of A. E. Chandler, member of the State Water Commission of California, in connection with its work concerning rights in both ground waters and surface waters; and the commission's report includes a report and recommendations by Mr. Chandler relating to laws affecting rights of use of surface waters.

any land, or directly into any stream, or other natural water course or channel, or into the sea, or any bay, lake, or pond; or into any street, road or highway, unless to be used for beneficial purposes." However, this provision is not to be so construed as to prevent the beneficial use of water from wells, either by direct flow or from storage, for irrigation, domestic, and other useful purposes except for driving machinery; and the exception in case of machinery does not apply if the water is utilized afterwards for irrigation or other useful purposes. (Sec. 4653.)

Public Regulation

Except as otherwise provided (such as in case of wells in the Honolulu District, noted below), regulation of artesian wells is under the Superintendent of Hydrography. (Secs. 4653-4656.) "For the more effectual carrying out of the provisions" of the act, for the purpose of making inspections and for other necessary purposes, sheriffs, police officers, and authorized representatives of any city, or county, or of the Superintendent of Hydrography, may at all times enter without warrant the premises upon which an artesian well is located or wherein artesian water is used. (Sec. 4659.)

Regulation by the Superintendent of Hydrography governs the extent to which the water of an artesian well may be devoted to useful or beneficial purposes, to such quantities of water as may be necessary for the purposes for which the well is used. (Sec. 4653.) Access to the well must be provided at all times for the purpose of inspection, unless the well has been sealed just above the water-bearing stratum in a manner approved by the Superintendent. (Sec. 4654.) No artesian well may be drilled without first giving the Superintendent written notice, containing certain specified information. (Sec. 4655.) A record of the boring, containing specified data, must be kept, and must be filed with the Superintendent within a specified time. (Sec. 4656.)

Relief of Well Owner from Liability

Any person owning an artesian well may relieve himself of further responsibility for it, by transferring the well to the county in which located, together with the exclusive right to develop artesian water on or under any property owned by him in the district in which the well is located and the right of entrance for the purpose of capping or plugging the well. The county must accept such offer, and has the right to cap or properly plug the well; or it may use the well and take water therefrom in pipes laid and maintained in such manner as to cause minimum inconvenience to the former owner. This section does not apply within the District of Honolulu, which is provided for in a separate statute, discussed below. (Sec. 4658.)

Appeals

Except as provided in the statute relating to wells in the District of Honolulu (which is summarized immediately below), any person, firm, copartnership, or corporation adversely affected, may appeal from any ruling of the Superintendent of Hydrography regulating the flow, manner of sealing, or manner of repairing an artesian well. The appeal lies to a board of appeals consisting of the Attorney General, Commissioner of Public Lands, and Superintendent of Public Works. The vote of one member of this board is sufficient to sustain the appeal and to abrogate the ruling from which appeal has been taken. (Sec. 4660.)

Statute Relating to Wells in District of Honolulu

A statute passed in 1927[65] gave to the Honolulu Sewer and Water Commission jurisdiction over artesian wells in the District of Honolulu, comprising the area extending from Maunalua to Moanalua, inclusive, along the south coast of Oahu. The Sewer and Water Commission was abolished in 1929 and its powers and duties, including the regulation of artesian wells, were transferred to the Board of Water Supply, City and County of Honolulu (see pp. 227 and 228, below). Thus the jurisdiction over artesian wells within the Honolulu District is vested in the Board of Water Supply, and not in the Superintendent of Hydrography under the general statute relating to artesian wells, summarized immediately above.

The section references in the following paragraphs are to the sections in Revised Laws of Hawaii 1945 that relate to the Honolulu District statute.

Investigations: Water Resources

The Board of Water Supply is vested with power to investigate surface and ground-water supplies in the Honolulu District, and surface waters on Oahu outside the district; to ascertain water requirements for current and reasonably prospective uses in the district for public, domestic, industrial, agricultural, and other purposes; and to plan and recommend to the legislature and board of supervisors methods of conservation and distribution of water. Public records are made available for these purposes. (Secs. 6865-6866.)

Investigations: Uses of Water

The board may investigate all uses of water within the Honolulu District. This includes the manner and extent of use or other disposition of water, and works for the elevation, transmission, or distribution of water upon public or private property. With regard to artesian wells, the board may investigate depth and strata penetrated; pressure, quantity, quality, or chemical composition of the water; and the general conditions involved, including encasement, capping, and other equipment or means of control. The board may estimate reasonable requirements of water for useful or beneficial purposes, according to reasonable standards. (Sec. 6872.)

Existing Wells: Data

Every owner or user of any artesian well in the district is required to disclose to the board, on demand, the precise location of the well and all other information relating to it, including the precise manner of use or operation, volume of water drawn or flowing, and means of control. (Sec. 6867.)

Existing Wells: Relief from Liability

Any person owning an artesian well in the district may relieve himself of further liability on its account by granting to the city and county the right to seal the well permanently. In such case the responsibility therefor must be accepted by the city and county and the well shall then be sealed. (Sec. 6868.)

New Wells: Permits

It is unlawful for any person to sink, bore, drill, or drive any new artesian well in the district, or to open one that has been unused for 2 years or

[65] Sess. Laws Haw. 1927, Act 222. As amended, this act appears in Rev. Laws Haw. 1945, secs. 6865-6875.

more, except pursuant to a permit from the board. Application for a permit must be in prescribed form and must contain certain required information. Fees for issuance of permits are provided for. (Sec. 6869.) As a condition precedent to granting a permit, the board may require the applicant to sign an agreement to perform the work in such manner as it shall prescribe and to operate the well according to law and to the board's rules and regulations; and may require the applicant to furnish a satisfactory bond or other indemnity to insure compliance. In case of any failure to comply, the board may seal the well or put it in proper condition, in either case at the cost of the bond. (Sec. 6870.) If it appears that any unlawful or improper condition or use exists with respect to any well, works, or water covered by a permit, the board may serve notice upon the offender to appear and show cause why the permit should not be suspended or revoked. The board may suspend or revoke a permit for cause satisfactory to it, after which any unauthorized use of the well is unlawful. (Sec. 6871.)

Rules and Regulations

The board has power to prescribe and enforce rules and regulations judged necessary or advisable in connection with any matters within the scope of its powers and duties. These may include "(a) the prevention of waste and pollution of water, (b) the manner in which new artesian wells in the district may be bored, drilled or driven, encased and capped, (c) the manner in which artesian wells generally shall be maintained, controlled and operated to prevent waste of water from any artesian basin or area or the impairment of its potability, (d) the limitation to beneficial uses of all water, (e) in times of shortage or threatened shortage of water, or of danger to potability of the water of any artesian basin or area by overdraft on such basin, the restriction of the drawing of water in all wells supplied from such basin on a basis proportionate to the proper and beneficial uses served by them respectively, (f) and other matters having for their object the proper conservation and beneficial use of the water resources available for the district." (Sec. 6872.)

With the approval of the Mayor, the board may make, alter, amend, and repeal rules and regulations, not inconsistent with law, deemed necessary for the furtherance of the act or for the appropriate exercise of its powers. When duly approved and published, the board's rules and regulations have the force of law,[66] and any violation thereof is a misdemeanor. (Sec. 6873.)

Entrance upon Property

Any member of the board, or any authorized representative or employee, may enter public or private property without warrant, at any reasonable time and without doing unnecessary injury, in order to exercise any of the board's powers or authority. (Sec. 6872.)

Proceedings

The board is required to keep a record of its proceedings and decisions. (Sec. 6866.) It may subpoena witnesses and compel their attendance at investigations or proceedings before it, as well as the production of documentary evidence, and may administer oaths and examine witnesses. Any

[66] General laws relating to rules and regulations having the force and effect of law provide that notice and public hearing must precede the making of any such rule or regulation made by governmental agencies; courts and certain other agencies being excepted. Provision is also made for the recording of such rules and regulations and for their inspection and admissibility as evidence. See Rev. Laws Haw. 1945, secs. 466-476.

person failing to appear or to testify may be punished as for contempt of the circuit court, on application of the board to the court. (Sec. 6872.)

Appeal to Supreme Court

Appeal may be taken directly to the supreme court from any order of the board refusing or suspending or revoking a permit. The appeal is governed by the practice in suits in equity, and the supreme court may review and affirm, modify, or reverse the board's decision or order in any matter of law or fact. (Sec. 6874.)

Penalties

Any person who violates any provision of the act, or any rule or regulation of the board promulgated under it, is guilty of a misdemeanor. Penalties are provided. (Sec. 6875.)

Character of Regulation

The statute that applies to artesian wells generally was limited as to the geographical application of some of its provisions by the enactment of the later statute governing the installation and control of artesian wells within the District of Honolulu. The sections in the general statute relating to administrative functions, as now revised, are so worded as to harmonize with this later local statute, so that even aside from the effect of any rule of statutory construction, it is made clear that there is no conflict or overlapping of authority with respect to the regulation of artesian wells within the Honolulu District and of those outside of it. Not only are different public agencies charged with regulation of artesian wells inside and outside the district, but the character of regulation differs in some important respects.

The general statute defines "artesian well" and "waste," declares an artesian well that is not properly equipped and controlled to be a common nuisance, and provides that one responsible for such nuisance or for the waste of artesian water is guilty of a misdemeanor. These provisions are not repeated in the statute relating solely to the Honolulu District. However, there are no limitations in the general statute upon the uniform applicability of these provisions throughout the Territory, and there is nothing in the local statute in conflict with them. There appears to be no question that these general provisions apply within the Honolulu District, as elsewhere.

Regulation Under the General Statute

This statute is designed for the prevention of waste from artesian wells generally. The Territory has not attempted under this law to impose public control over the installation of wells. That is, while written notice must be given to the Superintendent of Hydrography before an artesian well may be drilled in any area outside the Honolulu District, the statute does not require the obtaining of a permit for the drilling. It is the operation and maintenance of artesian wells that are made subject to regulation; and operation is not curtailed by the statute so long as the well is kept in proper repair, and so long as water from it is not wasted above or below the surface of the ground but is used within limits found by the Superintendent of Hydrography to be necessary for certain beneficial purposes. The Superintendent's jurisdiction extends not only to the extent of withdrawal and use of the water with respect to such limitations, but also to the manner of repairing and of sealing the wells.

The provision with reference to relief of a well owner from responsibility in connection with it, is an inducement to the owner of a defective well to avoid liability for maintaining a common nuisance. If the county, or city and county, accepts the transfer of ownership—and it must do so if the well owner so offers—the well may then be sealed by the county, or may be repaired and used by it, as conditions may warrant.

Regulation Under the Local Statute Relating to Honolulu

The authority with which the Board of Water Supply is vested, with respect to artesian wells in the Honolulu District, is greater than the authority accorded the Superintendent of Hydrography over wells outside the district, and in many instances the powers of the former are stated in more specific terms. The board's rules and regulations, duly approved and promulgated, have the force of law. The board has authority to make rules and regulations, not only to prevent waste and to effectuate a limitation to beneficial uses of all water, but in periods of actual or threatened shortage of water or of danger to its potability, to restrict the withdrawal of water from all wells supplied from an artesian basin on a basis proportionate to the proper and beneficial uses that they respectively serve.

The board also has considerable authority over the installation of new artesian wells in the district, and over the reopening of old wells that have been out of use for 2 or more years, although this authority is less than the measure that the original act attempted to provide. A permit must be obtained from the board before any such new installation or reopening may be undertaken. The board may provide in its rules and regulations for the manner in which new artesian wells may be installed, including their casing and capping; and before granting a permit either to sink or reopen a well, the board may require the applicant to sign an agreement concerning the satisfactory performance of the work according to the conditions that it prescribes, and the subsequent operation and maintenance of the well according to the statute and the board's rules and regulations, and may require a bond to insure compliance with all these conditions. There is no present authorization to deny a permit so long as the applicant is ready to comply with these requirements; but if a well is drilled or reopened under a permit without complying fully, the board may seal the well or put it in proper condition at the cost of the bond, and the board may suspend or revoke a permit, after a hearing, if the well is being improperly maintained or if its water is being improperly used. All this constitutes an important measure of authority.

Section 5 of the original 1927 enactment, which section provided for the issuance of these permits by the Honolulu Sewer and Water Commission, predecessor of the present board, contained a sentence reading as follows:

> If, in the opinion of the Commission, the proposed work would threaten the safety of the water of the artesian area or basin which would be drawn upon by such well, by lowering its level or increasing the salt content of any existing well or wells, the application therefor may be denied. * * *

This of course was a far-reaching power, for it meant that the commission might attack the problem of seriously threatened shortage or increase of salinity, by prohibiting the installation of new wells. However, when the commission attempted to exercise this power in order to avert a greater overdraft and an increase in the already high salt content of the water of an arte-

sian area, the supreme court held this portion of the act unconstitutional.[67] This has been discussed at length heretofore (see pp. 179-186). A few weeks after the rendering of this decision, section 5 was so amended as to delete this one sentence, and at the same time subsection 3 of section 8 was so amended as to broaden the control of the commission over the uses of water from artesian wells.[68] Subsection 3 of section 8 had formerly related solely to the commission's power to prescribe and regulate the installation, reopening, control, and operation of wells, and to supervise the installation and maintenance of devices for measuring the water from such wells. As amended, the subsection gave the commission authority to prescribe and enforce rules and regulations concerning any matter within the scope of its powers and duties, and specifically including the matters listed in the quotation given above on p. 201.

The supreme court had said in its decision in the *City Mill Company* case, as noted heretofore (see pp. 182-183), that the police power of the Territory extended to the imposition of reasonable regulations for the boring and the maintenance of private artesian wells (although the power simply to regulate was not in issue), but that it did not extend to the prohibiting of an individual landowner from drilling an artesian well on his own land while at the same time permitting unrestrained operation and use of existing wells. The effect of amending section 5 is to make the statute conform to this judicial distinction.

The authority to prescribe and enforce a rule restricting withdrawals of water, in an emergency, from all wells within an artesian area on a proportionate basis, was not in the original enactment but was included in the statute by amendment of section 8 after the rendering of the *City Mill Company* decision. It is therefore interesting to note the statement of the court in that decision (at p. 947) to the effect that if the danger of excessive salinity ever should become sufficiently pressing, "it may be" that the Territory would be justified in restricting or even wholly forbidding the use of water from all wells, either temporarily or permanently. This statement was dictum; for it was then said that whether existing conditions were such as to justify a requirement by the Territory that all users, including the appellant after boring its well, be equally limited to less water than required, need not then be determined because no effort had been made by or on behalf of the Territory to resort to any such remedy. In any event, the board now has statutory authority to effectuate a proportionate reduction in all existing uses of water from artesian wells in the event of danger to the quantity or quality of the water supply.

The board's powers of regulation within the Honolulu District, then, extend to the prevention of waste from artesian wells and the pollution of artesian water, including the permanent sealing of defective wells for which the owners wish to relieve themselves of liability; to the proper installation of new wells and reopening of old ones, and to their proper maintenance and operation; to the restriction of uses of all water within beneficial limits; and to the proportionate reduction of uses from artesian wells during emergencies. The board's authority does not extend to the prohibition of new installations of artesian wells while existing wells are allowed to operate.

[67] *City Mill Co.* v. *Honolulu Sewer & Water Commission*, 30 Haw. 912 (1929).

[68] Sess. Laws Haw. 1929, Act 201, approved May 1, 1929. The *City Mill Company* case was decided March 25, 1929.

Chapter 6

OTHER TOPICS IN THE LAW OF WATERS

Drainage of Surface Water

Rights to the use of water drained from upper lands have been discussed heretofore (see pp. 78-82). Very few cases that have reached the supreme court have involved questions of disposal of drainage water, or of injury resulting from the drainage upon land of surface water from higher land, as distinguished from rights of use. It does not appear that any one of the three major views of the law of interferences with diffused surface waters—common law or common enemy, civil law, or reasonable use—has yet been specifically adopted in Hawaii.[1] The supreme court has held an upper owner liable for injury resulting from a very substantial alteration in the natural flow of storm water; but that would probably be actionable under any of the major rules. It is also recognized that easements may be secured by prescription for the discharge of waste water.

A question of injury was raised in an early case in which an owner of lower land brought suit to restrain the owner of adjacent upper land from opening a waterway through a bank that separated the two tracts, through which waste water was discharged upon the lower land although formerly used to supply water to it.[2] The bill recited the fact that complainant's lessees had obstructed the waterway and prevented the draining of defendant's lands upon those of complainant. As the injury thus had ceased, and as there was no allegation that defendant had reopened or threatened to reopen the waterway, the supreme court upheld the sustaining of a demurrer by the lower court, without prejudice. However, the supreme court thought that the ground upon which the lower court had sustained the demurrer, was not so clear. This defendant had recovered damages, in an earlier case, against this plaintff's lessees for obstructing this same waterway; but the right of defendant to discharge the water through the bank had not been "gone into" and hence not adjudicated. The supreme court stated (at p. 609) that:

> When a permanent injury to real estate is threatened and equity is appealed to for an injunction, the Court must necessarily investigate the rights of the parties to the easements which it is contended exist. * * *

During the last years of the Hawaiian Kingdom the government was held liable (under a statute then in force) because of damages that resulted from alterations, made by its agents, of the flow of storm water.[3] It appeared that the government (through the road supervisor) had cut trenches through a sidewalk in Honolulu for the purpose of draining storm water upon private property and thence to the sea. The owner of a lower lot submitted to this so long as the water escaped without injuring his property; but he

[1] An excellent discussion of this general subject appears in a recent article by Kinson, S. V., and McClure, R. C., entitled "Interferences with Surface Waters," 24 Minnesota Law Review, No. 7, pp. 891-939 (June 1940).

[2] *Lopez* v. *Acheu,* 5 Haw. 607 (1886).

[3] *High* v. *Hawaiian Government,* 8 Haw. 546, 550-551 (1892). The statute then in force (Laws Haw. 1888, ch. 51, s. 2) authorized the bringing and maintenance of suit against the government by any person having an unsatisfied "claim" against the government. The court held that this authorization applied to claims arising from torts, as well as from contracts.

protested when the government filled in the channel of escape of the water, and brought action when the result of making this obstruction was a flooding of his property. The court held that the government, although not always bound to protect adjacent property holders from the inevitable consequences of laying out and grading streets, nevertheless might not collect surface water from its lands and streets and discharge it upon private property. Hence the cutting of these trenches was a direct invasion of private property without legal authority. Although the property owner submitted so long as he was not injured, the government still had the burden of keeping the drainage way open to the sea.

An easement for the drainage of waste water may be acquired by prescription. In a case involving a claim that the maintenance of a dam interfered with the proper drainage of rice lands adjacent to a river, the opinion of the court stated that a large proportion of the rice plantation "has acquired by prescription the right to drainage into the Waikele river."[4] This case is not very satisfactory authority, owing to the doubts expressed by two members of the court concerning various points involved, including prescriptive rights. It is being cited herein merely to show that a prescriptive right to drain water into the river was recognized in the opinion of the court, and that the use of the dam by defendants was made subject to the uses of drainage of plaintiffs' land. No analysis of the prescriptive right was made in the opinion of the court—simply a statement that it existed; but the authority of the case is weakened by the statements made in both of the other opinions filed.[5]

Bed of Nonnavigable Stream

Rights of Ownership

Two cases in the supreme court, between the same parties, have dealt with rights of ownership of land under nonnavigable waters. As a result of these decisions, an award of land adjoining a stream was held, by construing the description in the award and the intent of the parties, to exclude the bed or channel of the stream; and the holder of a right to the use of water of a stream was held not entitled to enjoin the placing of an obstruction in the stream bed, by the owner thereof, which was not proved to be injurious to the enjoyment of the easement.

[4] *Cha Fook* v. *Lau Pin*, 10 Haw. 308, 309 (1896).

[5] An injunction against maintenance of the dam had been sought. There was doubt as to whether the dam would cause freshet water to overflow plaintiffs' land to their injury, so the injunction was denied, without prejudice to plaintiffs' right to renew application for the same whenever events should justify it. However, the judgment was that defendants should open the gates of the dam upon reasonable notice when necessary to drain plaintiffs' rice land, which appeared to be required twice during the growing of each half yearly crop. Justice Whiting stated, in a concurring opinion, that he was not satisfied that an injunction should be granted on the showing made thus far, but that under the circumstances it was just and right that defendants' use of the dam should be subject to the uses of drainage of plaintiffs' land. He felt that the case did not present such a clear and distinct issue as to enable him to decide upon questions of law involving prescriptive and riparian rights and applicability of the common-law riparian doctrine to Hawaiian conditions. Justice Frear, in a partially dissenting opinion, felt that the facts were such as to call for an injunction of some sort, but that owing to the great uncertainty in regard to a number of points involved, the bill should be dismissed without prejudice. But he could not agree that dismissal without prejudice should be coupled with an order for the opening of the dam upon notice at certain seasons. The chief question that should have been decided, he said, was what were plaintiffs' *rights*, and not present needs, as to drainage? Plaintiffs had not attempted to show a prescriptive right to deep drainage, he said, and by their own evidence their prescriptive right, if any, to surface drainage was not being interfered with; and injunction should have been granted or denied, depending upon whether plaintiffs had or had not a prescriptive or riparian right to deep drainage and upon whether such right, if it existed, was or was not being infringed upon.

Title to Stream Bed

The first of these cases was an action brought by the owner of a kuleana adjoining a stream, to restrain the digging of a tunnel in the bed of the stream, on the kuleana side, on land below the high-water mark.[6] It was contended by complainant that title to the kuleana extended to the thread or center of the stream. The land commission award of the kuleana described one side of the tract as extending along the stream ("e pili ana me Kahawai"), by courses and distances; and a diagram in the original award, over the signatures of the commissioners, showed the boundary line a short distance away from the drawing representing the stream. The court held that assuming, but without deciding, that in such cases a *prima facie* presumption arises that the grantor intends to convey to the thread of the stream, there was sufficient evidence here to rebut the presumption. The word "Kahawai" means not only the flowing stream but also the bed or channel, including the portion covered at high water, and "e pili ana" means "adjoining." Hence, it was held, the use of these terms indicated that the object referred to as being adjoined, was excluded. The court's construction of the language of the description led to the conclusion that the actual intention of the parties was to exclude the stream bed. Complainant, therefore, failed to show title to the portion of the stream bed crossed by the tunnel.

Several years earlier the court had held that a description in a lease of land "bounded * * * by a deep gulch" meant to the bottom or middle of the gulch, where the lessor owned to the middle; and that there was no ambiguity, even though the lease was of the makai portion of an ahupuaa "suitable for the cultivation of sugar-cane" and it was conceded that the sides of the gulches were not suitable for that purpose.[7] This decision was distinguished in the *Wailuku Sugar Co.* case referred to in the preceding paragraph, as having been decided upon its own particular circumstances, and as not laying down any general rule that must control in the case at bar. The statement in the *Notley* opinion that "Each case must be considered by itself" (at p. 529) was quoted.

The Supreme Court of Hawaii apparently is not committed to any rule of law whereby an instrument of conveyance that describes land as being bounded "by" or "along" a stream, conveys title either to the thread of the stream, or only to its banks. The court stated in the *Wailuku Sugar Co.* case[8] that the rule followed in various jurisdictions, to the effect that the grantee thereby obtains title to the thread of the stream, is a rule of construction only, and not a rule of law. Presumably, then, each such case will be "considered by itself," in an attempt to ascertain and to effectuate the actual intent of the grantor.

Right of Owner of Stream Bed As Against Owner of Easement

The other case concerning the use of the bed of a nonnavigable stream was an action brought by the holder of a water right to enjoin the building of a wall or the depositing of material in the stream, the alleged effect of which was to obstruct the flow of water and to injure the exercise of the

[6] *Wailuku Sugar Co.* v. *Hawaiian Commercial & Sugar Co.*, 13 Haw. 583 (1901).
[7] *C. Notley & Sons* v. *Kukaiau Plantation Co.*, 11 Haw. 525 (1898).
[8] *Wailuku Sugar Co.* v. *Hawaiian Commercial & Sugar Co.*, 13 Haw. 583, 584 (1901).

right to take water from the stream.[9] It was undisputed that the bed of the stream, at the points referred to in the complaint, belonged to respondent, subject only to an easement in complainant ("and perhaps to a similar easement in other proprietors") of the right to the free and uninterrupted flow of water to the ditch headgate. The court said (at p. 669):

> At best, then, the complainant may properly ask for an order restraining only the erection of such structures or the making of such deposits of earth or other material, by the respondent, as will obstruct the flow of water in the stream to the detriment of the complainant.

The bill was dismissed because the averments of injury were not clearly established by the evidence. It was stated (at p. 671):

> In order to justify an injunction the danger apprehended and sought to be guarded against must be real and rest upon a substantial basis.

In other words, the holder of an easement in the flow of the stream was not entitled to enjoin the owner of the stream bed from making such use of it as did not disturb the enjoyment of the easement.

Accretion

Cases dealing with accretion have been decided in connection with land along the sea. They are discussed hereinafter under the subject of navigable waters (see p. 219).

Navigable Waters

Government Ownership and Control

The absolute fee and ownership of all public lands, ports, harbors, and all other public property belonging to the Hawaiian government, were ceded to the United States by resolution of the Hawaii Senate ratifying the treaty of annexation; and the cession was accepted by the Joint Resolution of Congress to provide for annexation. The Organic Act provides, in section 91, for Territorial possession, use, and control of the public property ceded, and in section 106, for the management, by the Territorial Board of Harbor Commissioners, of shores and shore waters, navigable streams, harbors, ports, etc., belonging to or controlled by the Territory.

The several constitutional governments that succeeded the early absolute monarchies necessarily held title to lands and waters that had not been definitely alienated by one government or another. This included navigable waters within the jurisdiction of the government, title to which is held in trust by the government for the common use of the public.

It seems to be agreed that Kamehameha I, who established the Hawaiian Kingdom, was an absolute monarch who had absolute title to all lands and all waters within his domain. He, as well as each of his immediate successors, was the source of title; and prior to the adoption of any written laws or constitution the king "could give and take from. His will was law."[10] However, the concept of this as a fiduciary title was expressed in

[9] *Wailuku Sugar Co.* v. *Hawaiian Commercial & Sugar Co.*, 13 Haw. 668 (1901).
[10] *Carter* v. *Territory of Hawaii*, 14 Haw. 465, 470 (1902).

the first constitution, granted by Kamehameha III in 1840, which declared that all the land had belonged to the first Kamehameha, but not as his own private property, and that it belonged in common to the chiefs and people and was subject to the king's management (see ch. 3, p. 23). This, then, was an acknowledgement that the king's title was held in trust for the use of the people.

In a very early case[11] that involved police jurisdiction, Chief Justice Lee stated the unshaken doctrine of the law of nations to be that the maritime territory of every state extended to the ports, harbors, bays, mouths of rivers, and adjacent parts of the sea enclosed by headlands, belonging to it; and that the general usage of nations superadded a distance of a marine league, "or as far as a cannon shot will reach from the shore," along all the coasts. Within these limits, its rights of property and territorial jurisdiction are absolute. Hence the legislature in claiming jurisdiction over the seas surrounding the coasts of the Islands "had done no more than simply declare the universal law of nations."

Shortly after annexation of the Islands to the United States, and before the passage of the Organic Act, the supreme court stated:[12]

> The people of Hawaii hold the absolute rights to all its navigable waters and the soils under them for their own common use. See *Martin v. Waddell,* 16 Pet. 410. The lands under the navigable waters in and around the territory of the Hawaiian Government are held in trust for the public uses of navigation. *Stockton v. Baltimore & N. Y. R. R.* 32 Fed. Rep. 9.

The court, previously in this decision (at p. 721), had cited sections 160, 162, 166, 167, 169, 506, and 507, Civil Laws 1897, as evidence that the harbors and channels of the country were government property and had been placed under the supervision of the minister of the interior.

In a later case[13] the Territorial supreme court stated that by the common law, the title and dominion of navigable waters were held by the king in trust for his subjects, who had common rights of navigation and fishery therein, and that this jurisdiction had been held to extend one marine league from the beach at low-water mark. This statement was referred to with approval in a very recent decision,[14] in which the court also quoted at length from the statement by the United States Supreme Court in *Shively* v. *Bowlby*[15] as to the common-law title and dominion of the sea, and of rivers and arms of the sea, where the tide ebbs and flows, and of all lands below high-water mark, within the jurisdiction of the Crown of England. Title in such lands, the Supreme Court stated, belonged to the king as sovereign, and dominion vested in him for the public benefit for purposes of navigation, commerce, and fishing. The Territorial court held in this recent decision that the submerged land of the Territory had become the property of the United States upon annexation of the Islands; that Congress, in

[11] *The King* v. *Parish,* 1 Haw. 36 (58) (1849). The police justice jurisdiction was provided for in the "Act to Organize the Judiciary Department," ch. 2, art. 2, s. 1, September 7, 1847. It had been provided in Laws Haw. 1846, p. 83, art. 1, s. 1, that the jurisdiction of the Hawaiian Islands should extend and be exclusive for a distance of one marine league seaward, surrounding each of the 8 chief islands, and over the channels separating the islands.

[12] *King* v. *Oahu Railway & Land Co.,* 11 Haw. 717, 725 (1899).

[13] *Carter* v. *Territory of Hawaii,* 14 Haw. 465, 468-469 (1902).

[14] *Bishop* v. *Mahiko,* 35 Haw. 608, 645-646, 649 (1940). This case was decided on a submission on agreed facts. It involved the ownership of the fishery of Makalawena; and the supreme court held that the fishery was the sole property of the United States for the use and benefit of citizens of the United States.

[15] 152 U. S. 1, 11 (1894).

enacting sections 95 and 96 of the Hawaiian Organic Act, had acted within its legislative authority in opening to the public the sea waters of the Territory for fishing, subject to vested rights; and that the provisions of those sections concerning the validity of vested fishing rights, procedure for establishing their validity, and condemnation of private fishing rights for public use, did not violate the provisions of the fifth amendment to the Federal Constitution concerning due process and the taking of private property for public use.

The Question of Inalienability of Government Control

The supreme court has held that the government's control over the navigable waters of a harbor cannot be absolutely alienated.

The syllabus in the *King* case[16] contains one paragraph reading as follows:

> The State has the possession and control of the navigable waters of the said harbor and is a trustee thereof for the public and cannot absolutely alienate such interest.

This case involved the right of a railroad company to condemn land under navigable waters in Honolulu harbor, and a perpetual right of way over the harbor. The court held that under the circumstances of this case the company had not been empowered by the government to condemn the property in question.

After asking if the perpetual right of way over all the harbor that the company sought to condemn meant an exclusive right of way, or a priority in its use, the court stated that this was not subject to condemnation "and it is doubtful if the State as a trustee for the public could consent to part with it" (at p. 736). Previously in the opinion, the court had said that the lands under the navigable waters in and around the Islands were held in trust for the public uses of navigation; and had quoted from the decision of the United States Supreme Court in *Illinois Central R. R.* v. *Illinois*[17] to the effect that, conceding the right of a State to grant parcels of submerged lands for the erection of structures in aid of commerce, that was a very different matter from abdication of general control over lands under an entire body of navigable water, such an attempted grant being subject to revocation if not absolutely void (at pp. 723-725). In a concurring opinion Judge Perry thought that the adoption of the view that the company had not been empowered by the government to condemn the property, rendered it unnecessary to express an opinion as to the inalienable character of government ownership of lands under the navigable waters of the harbor (at p. 738).

The decision in the *King* case, then, could have been reached solely on the ground that executive action in accordance with the statutes had not resulted in empowering the company to condemn the property. However, the court seems to have based its decision also upon the broad ground of inalienability of the government's control over navigable waters of the harbor, at least so far as condemnation of the right of way was concerned. The decision was cited in a concurring opinion in a subsequent case[18] as

[16] *King* v. *Oahu Railway & Land Co.*, 11 Haw. 717 (1899).

[17] 146 U. S. 387, 452-455 (1892).

[18] *Territory of Hawaii* v. *Liliuokalani*, 14 Haw. 88, 105, 107 (1902).

having held that "the title to the soil beneath navigable waters is in the state and is inalienable"; but the writer of that opinion distinguished the *King* decision as having related to waters navigable in fact, and not to waters flowing over tide lands, which, he stated, had not been defined in the *King* decision or in any other decision of the Supreme Court of Hawaii as navigable waters.

Still later, in a case that involved fishing rights, the court stated that there was little, if any, doubt that Kamehameha III had the power to grant exclusive fisheries to individuals, "although there is a declaration by Chief Justice Judd that tends strongly to indicate that this Court at that time (1899) held to the contrary view"—quoting the statement at page 725 in the *King* case concerning the ownership by the people of absolute rights in the navigable waters and lands under them, title thereto being held in trust for the public.[19]

Rights of Use

Navigation

The navigable waters of the Territory are held by the government in trust for the use of the public, as stated immediately above. These waters are public highways, and in the absence of statutory prohibitions the public generally, and all of its members, are entitled to participate in the right of navigation upon such waters.[20]

It was held in the case just cited that the right of navigation includes travel for purposes of both business and pleasure, and necessarily includes the right of anchorage (at pp. 844-845). The right of navigation is paramount to that of fishery, where the two conflict; but the exercise of each right must be reasonable and with due regard to the rights of others (at p. 843). Hence a reasonable exercise of the right of navigation is not subject to injunction, even though to some extent this disturbs the fish in a private fishery (at pp. 844-846).

While the superiority of navigation was thus acknowledged in the *Kuramoto* case, it was not necessary to determine, under the circumstances of that case, whether the right of navigation could be supported to the point where it practically destroyed the right of fishery (at p. 846).

Fishing Rights

Fishing was one of the leading occupations of the early Hawaiians (see ch. 2, p. 10). Fishing rights always have been important in the Islands and have been involved in litigation in a number of cases, including at least two in the Supreme Court of the United States.[21]

The law of fishing rights in the Islands is a considerable subject in itself. It is not being given particular consideration in this study. Such references as are made herein are only incidental to the discussion of other matters that it is believed are more directly related to the main purpose of the study.

[19] *Carter* v. *Territory of Hawaii*, 14 Haw. 465, 470 (1902). This quoted statement is given in full on p. 209, above.

[20] *Kuramoto* v. *Hamada*, 30 Haw. 841, 842, 845 (1929).

[21] *Damon* v. *Territory of Hawaii*, 194 U. S. 154 (1904); *Carter* v. *Territory of Hawaii*, 200 U. S. 255 (1906). The Supreme Court in these two cases reversed two decisions of the Territorial Supreme Court, that had been decided and reported together in *Carter* v. *Territory of Hawaii* (*Damon* v. *Territory of Hawaii*), 14 Haw. 465 (1902).

Government Ownership of Underlying Lands Generally

Title to lands under the navigable waters of the Islands and within the jurisdiction of the government, as well as title to the navigable waters themselves, is in the government. This apparently has never been a moot question in Hawaii.

Title to the underlying lands of harbors and channels was held in *King* v. *Oahu Railway & Land Company*[22] to be in the government. While the decision in this case involved only the waters of a harbor that were navigable in fact, and the lands under them, the statement in the opinion of the court as to public ownership was broader, and related to lands under "navigable waters in and around" the territory of the government.

Title to the shores and submerged land of the Islands passed to the United States upon annexation of the Islands.[23]

Government Ownership and Control of Tide Lands

Owing to the configuration of the Hawaiian Islands and to the small range of the tides, the extent of tide lands apparently is not great.[24] However, questions of ownership and use of lands between high and low-water marks have been before the supreme court in several cases.

The ownership of tide lands, as well as of other lands submerged by the sea waters over which the government has jurisdiction, is in the government, and not in the private proprietors of lands on the shore except where covered by specific, valid conveyances. Such conveyances by the early governments of Hawaii have been upheld. The Territorial government, as custodian of the public property ceded to the United States by the Republic of Hawaii, may require the removal of obstructions, on publicly-owned lands, that interfere with the public rights of navigation and fishing.

Title to Tide Lands Is in the Government, Unless Divested in Individual Cases

Two decisions of the supreme court[25] have quoted a resolution of the privy council of August 29, 1850 (3 Privy Council Records 791), declaring:

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[22] 11 Haw. 717, 721, 725 (1899). See also *Carter* v. *Territory of Hawaii,* 14 Haw. 465, 468, 470 (1902).

[23] *Bishop* v. *Mahiko,* 35 Haw. 608, 645, 649 (1940). This took place, the court stated, upon the adoption by Congress of the Newlands Resolution, the Joint Resolution to provide for annexation of the Islands to the United States. This resolution accepted the transfer of title to all property of the Hawaiian government, the title having been ceded by the Hawaiian government by virtue of the resolution of the Hawaii Senate ratifying the treaty of annexation. See, further, p. 215, below.

See Organic Act, sec. 91, concerning the Territory's possession, use, and control of all public property ceded to the United States in connection with annexation of the Islands, until otherwise provided for by Congress or taken for the uses and purposes of the United States by direction of the President or of the Governor; and sec. 106, giving the Territorial Board of Harbor Commissioners control and management of the shores, shore waters, navigable streams, harbors, harbor and water-front improvements, ports, etc., belonging to or controlled by the Territory.

[24] The islands are essentially mountain masses. They have coastal plains of greater or less extent, but much of the coast is precipitous (see pp. 4-5, ch. 2). According to Stearns, H. T., and Vaksvik, K. N., "Geology and Ground-Water Resources of the Island of Oahu, Hawaii," Terr. Haw. Dept. Pub. Lands, Div. Hydrography, Bul. 1 (1935), p. 272, "The tidal range of the ocean about Oahu averages about 2 feet." The effect of this condition upon the navigability of Hawaiian tide waters was thus stated by Thomas Fitch, Esq., in a concurring opinion in *Territory of Hawaii* v. *Liliuokalani,* 14 Haw. 88, 105 (1902): "In high northern latitudes land which is bare at low tide may be covered at high tide with sufficient water to float a line of battle ship, while on the shores of Hawaii, the tide lands are, even when the sun and moon are in conjunction and the time is near the equinoxes, rarely covered with sufficient water to float a fishing boat."

[25] *Territory of Hawaii* v. *Liliuokalani,* 14 Haw. 88, 91-92, 103 (1902); *Bishop* v. *Mahiko,* 35 Haw. 608, 644 (1940).

> That the rights of the King as Sovereign extend from high Water Mark to a Marine league to Seaward, and to all Navigable Straits and passages, among the Islands, and no private right can be sustained, except private rights of fishing, and of cutting Stone from the Rocks, as provided for and reserved by law.

This resolution of the privy council was not a law, for as the court held in the *Liliuokalani* case, the privy council had no power to enact laws and could not by such resolution limit the power of the king to award title to land below high-water mark. The resolution, in any event, appears to have included a claim by the sovereign of title to tide lands; and the existence of such title in the king was a prerequisite to the holding in the *Liliuokalani* case that Kamehameha V possessed the power to convey title to tide land. The power of the early governments to alienate tide land was again affirmed in *Brown* v. *Spreckels*.[26] These cases upheld conveyances of title to land on the shore that were intended to reach to low-water mark (see pp. 216-219, below); they did not hold or even intimate that alienation by the government of adjacent tide lands was implied in all grants of land lying on the shore.

It was held in a fairly early case[27] that a grant of land described in a patent as having two courses "a hiki i kahakai," with a connecting course "ma kahakai," extended to the high-water mark on the sea beach.[28] This was an action of trespass upon land formed by accretion in front of the land described in the patent, as noted below (see p. 219), and did not involve title to tide land. As against a contention that the patented land and the sea were not coterminous, the court held that the clear intent was to grant to the sea. And then, by way of dictum, the court stated:

> In this kingdom the average rise and fall of the tide is two feet. Where the coast is of rock, high and low water are on the same line. Where it is of sand, the difference between high and low water is generally too little and too ill-defined and shifting to be taken into account.
>
> Section 387 of the Code, page 92 Compiled Laws, seems to imply that the proprietorship of land adjacent to the beach extended to low water mark, for it enacts that the fisheries for a mile from low water mark are the property of the owners of the lands adjacent and appurtenant, thus making the boundary between the land and the fishery to be the low water line.

It was then stated that whether some land between the then existing high and low-water marks had been trespassed upon was not the question. The question was whether land above high-water mark, that had been formed by accretion against the shore line existing at the date of the survey and grant, had become attached to it by the law of accretion, and this was answered in the affirmative.

Notwithstanding the dictum quoted above, the decision in this case was held subsequently, by the Territorial supreme court, to accord with the doctrine that the title to lands bordering on tide water extends only to the

[26] 14 Haw. 399, 404 (1902).

[27] *Halstead* v. *Gay*, 7 Haw. 587, 589 (1889).

[28] "Kahakai" was translated as meaning "the mark of the sea, the junction or edge of the sea and land." It was held that in the description of the survey in question, this meant the high-water mark on the sea beach. "A hiki i kahakai" was thus interpreted as "reaching to high-water mark," and "ma kahakai" as "along the high-water mark."

high-water mark.[29] The law of this latter case was decided according to the averments of the bill (the appeal being heard on demurrer) that title to shore frontage between high and low-water marks was in the United States, having been ceded thereto by the Republic of Hawaii.[30] The grounds of demurrer relied upon were, among others, that the United States should be a party to the bill, and that the suit involved questions of title to real estate that a court of equity should not take up. The circuit judge, in sustaining the demurrer, acknowledged that "title to the shore is in the sovereign or state." The supreme court, after referring to the averments of title in the bill, stated that respondent's land had been described in the land commission award as running "ma kahakai," which in *Halstead* v. *Gay* "was held to mean 'along the high water mark.' That decision accords with the doctrine of the United States Supreme Court." *Hardin* v. *Jordan*[31] was quoted to the effect that it had been distinctly settled that government grants of lands bordering on tide water extended only to high-water mark, and that title to the shore and to lands under water in front of lands so granted, enured to the State if a State had been created (at pp. 367-369).[32] It was also said that under the decision in *Halstead* v. *Gay* the defendant's claim of ownership of the shore was not open for discussion; that ownership of the shore, where land grants included the shore by custom, prescription, or express terms, was subject to the right of the public use for purposes of navigation or fishery, but that such limitations of ownership did not apply to cases where there was no grant of the shore, express or implied, and no prescriptive claim thereto (at p. 369).

In a case decided in the following year a patent contained a boundary description that was translated as "along the edge or side of the sea."[33] This, the court stated, was ambiguous, and "might mean along high water mark or along low water mark. Presumptively it means along high water mark." The presumption was overcome by construing the description in

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[29] *Territory of Hawaii* v. *Kerr,* 16 Haw. 363, 368 (1905).

[30] This was done, notwithstanding the fact that counsel for the Territory had "assumed that respondent" (holder of a lot on the shore) "owns to low water mark, whatever the interpretation of this language means," because he considered the question of ownership in that space not vital to the issue.

[31] 140 U. S. 371, 381 (1891).

[32] In the earlier case of *Territory of Hawaii* v. *Liliuokalani,* 14 Haw. 88, 106-107 (1902), a concurring opinion by Thomas Fitch, Esq., referred to two lines of reasoning employed to define the nonalienable rights of the public and those of riparian owners, with respect to the soil lying between high-water mark and the line that divides actually navigable and nonnavigable waters; and expressed the opinion that in view of the decision in *King* v. *Oahu Railway & Land Co.,* 11 Haw. 717 (1899)—to the effect that title to the soil beneath navigable waters is in the state and is inalienable—"the result reached by both lines of reasoning is best expressed by holding that the soil under waters navigable in fact belongs to the United States, and that the soil between the shore and the line dividing the navigable from the non-navigable waters is in the riparian owner, or owner by grant." He pointed out that navigable waters had not been defined, in the *King* case or in any other decision of the Supreme Court of Hawaii, as waters flowing over tide lands. However, notwithstanding these expressions, the actual decision in the *Liliuokalani* case was that Kamehameha V had power to make a grant of land between high and low-water marks, and the result of the decision, which was rendered on demurrer, was that the terms used in the royal patent had the legal effect of conveying the tide land in litigation (see pp. 217-218, below).

[33] *Brown* v. *Spreckels,* 18 Haw. 91, 97-98 (1906). Affirmed, *Spreckels* v. *Brown,* 212 U. S. 208 (1909).

More recently, in a boundary adjustment proceeding (*In re Waikapu Boundaries,* 31 Haw. 43, 47 (1929)), the court referred to the survey of the Ahupuaa of Ukumehame, and stated that from the written description and map there was no doubt that the courses as surveyed and declared by the surveyor "ran 'along the ocean' which means along high water mark, at least when not otherwise expressed." Ownership of land below high-water mark was not involved. The only purpose of the proceeding was to interpret and apply the common boundaries theretofore adjudicated between two ahupuaas.

the award and patent in relation to the diagram therein. (See p. 218, below).

The most recent pronouncement of the Supreme Court of Hawaii concerning navigable and tidal waters is to the effect that title to the shores of the Islands passed, upon the adoption of the Joint Resolution of Congress providing for annexation, to the United States, and that they thereupon became the sole property of the United States, subject to vested rights.[34] In this decision the statements in *Carter* v. *Territory of Hawaii*,[35] *The King* v. *Parish*,[36] and *King* v. *Oahu Railway & Land Company*,[37] concerning the title and dominion of navigable waters, as well as the resolution of the privy council of 1850 regarding the same subject (see p. 213, above), were all quoted with approval. This title to the submerged lands and the sea waters covering them, it was said, did not vest in the United States in a proprietary sense. The United States had adopted the principles of the common law with respect to the ownership of lands below high-water mark. *Shively* v. *Bowlby*[38] was quoted concerning these common-law principles, as noted above (see p. 209). Another quotation was taken from *Shively* v. *Bowlby* (pp. 49-50) to the effect that title to tide waters and the lands under them in the Territories was held by the United States for the benefit of the whole people, in trust for the future States; and that Congress had acted on the theory that navigable waters and underlying soils, including tidal waters, should not be granted away during the Territorial period, except in case of emergency, but should be held for the dominion of the future States when created. This question of the nature and incidents of title of the United States in the sea waters of a Territory was held to be material to the determination of the issues in the *Bishop* v. *Mahiko* case.

Control and Use of Tide Lands

Even though the extent of tide lands on the Islands apparently is not great, and the depth of water upon them small at high tide, the tide waters appear to be navigable in fact so far as small fishing and pleasure craft are concerned. Furthermore, the tide lands are important to navigation with respect to the erection upon them of wharfs and piers that afford access to boats. The government, of course, is the custodian of navigable waters for use by the public for navigation and fishing (see pp. 208-211, above).

The Organic Act gives the Territory the possession, use, and control of the public property ceded to the United States by the Republic of Hawaii, and imposes upon the Territory the duty of maintaining, managing, and caring for such property until otherwise provided by Congress or taken for the uses and purposes of the United States by direction of the President or of the Governor.[39]

[34] *Bishop* v. *Mahiko*, 35 Haw. 608, 643-649 (1940).

[35] 14 Haw. 465, 468-469 (1902).

[36] 1 Haw. 36 (58) (1849).

[37] 11 Haw. 717, 721 (1899).

[38] 152 U. S. 1, 11 (1894). A material part of this quotation from *Shively* v. *Bowlby* also appears in the syllabus by the court in *Bishop* v. *Mahiko*.

[39] Organic Act, sec. 91. See footnote 23, above, concerning the provision in sec. 106 of the Organic Act giving the Board of Harbor Commissioners control of navigable waters and specifically including the shores, belonging to or controlled by the Territory.

The case of *Territory of Hawaii* v. *Kerr*[40] has been referred to above in connection with the general rule of ownership of tide lands (see pp. 213-214). This was a bill in equity, brought by the Territory, to require the owner of a lot on the seashore to remove a concrete wall that he had constructed on the tide land in front of his lot (except for one corner which projected a few feet over low-water mark), which he was filling in with coral and sand for the purpose of building a residence on the fill, and to restrain the erection of the residence. The bill averred that title to the shore frontage below high-water mark was in the United States as successor to the Republic of Hawaii, and that the control of this tide land was in the Territory, subject to the right of access of the lot owner to the navigable waters in front of his lot. The sea boundary of defendant's land had been described in the land commission award upon which title was based as running "ma kahakai," that is, along the high-water mark (see pp. 213 and 214, above).

The supreme court, in reversing a decree sustaining a demurrer, held that the Territory, in performing the duty of caring for the public property placed in its possession by the Organic Act, may resort to a court of equity to require the removal of obstructions to public rights upon that portion of the seashore that is outside of the high-water mark (at p. 376). Proprietorship of land that is bounded by the shore, it was said, does not include the right to build, below the high-water line, such walls or other obstructions as may interfere with the public right of navigation or of fishing. The court distinguished the building of a wharf or pier that would not obstruct navigation, rights of way, or fishing—which might be termed a right incident to the proprietorship of land bounded by the shore—from the erection of a residence on the shore, when the shore is owned by the United States (at pp. 368-369). The defendant's wall was held to be a "purpresture," a public nuisance, which he could be required to remove and could be restrained from renewing (at pp. 369-376).

Conveyances of Tide Lands to Individuals

The supreme court has held that the early governments of the Islands had the power to make grants of land between high and low-water marks. Hence grants or awards of land, made by the early governments, that in express terms or by necessary construction were intended to reach to low-water mark, conveyed the tide land.

Cases of purported alienation of tide lands made after annexation of the Islands to the United States have not been found in the Territorial supreme court decisions. However, the Territorial court has stated that private rights previously granted would not be affected by annexation, even if the Federal rule differed from that previously obtaining in the Islands. As noted in the foregoing discussion, tide lands are held to belong now to the United States and to be under the management of the Territorial government.

[40] 16 Haw. 363 (1905).

Power of the Early Governments To Convey Title to Tide Lands

The supreme court has held, in at least two controversies, that the early governments of Hawaii had the power to convey to private individuals title to tide lands.[41]

In a suit brought by the Territory to restrain the removal of sand and gravel from land below high-water mark, the supreme court said:[42]

> The general rule of law is that the sovereign power of any country or state can make a valid grant to a private individual of land between high and low water mark.

Various authorities were cited in support of this rule; but it was qualified by a citation to the effect that an express declaration is necessary to warrant the inference that the state intended to permit such tide land to be converted into private property. It was held here that Kamehameha V had the power to grant tide land.

The opinion in a case, also rendered in 1902, in which the government was not a party, stated that there could be no doubt that the power "formerly" existed in Hawaii to alienate land lying between high and low-water marks, and that there could also be no doubt that private rights previously granted would not be affected by the subsequent annexation of the Islands to the United States, "even if the law as held by the federal courts differed from the law that previously obtained in these islands in this respect"; and in the decision on a subsequent appeal in the same cause it was reaffirmed that "There is no rule of law that would prevent the title from extending to low water mark."[43] Titles to two tracts that originated during the reign of Kamehameha III were involved, one based upon a land commission award and royal patent and the other upon a deed from the king; and both titles were upheld as extending to low-water mark (see pp. 218-219, below).

The right of alienation of tide lands on the part of the early governments, then, has been definitely held by the supreme court to have existed. However, it was conveyances by only those early governments that were under consideration in these decisions.

It is evident that early conveyances of tide lands were made, in addition to those involved in litigation in the supreme court. In the 1906 decision in *Brown* v. *Spreckels* (see footnote 43), the court said, in connection with its statement that no rule of law would have prevented title under the land commission award and patent from extending to low-water mark, "There are other awards and patents that cover land below high water mark * * * " (at p. 98).

Terms Used in Conveyances

The royal patent in the *Liliuokalani* case[44] described one boundary of

[41] The supreme court, in addition to this matter of the power of the early governments to divest themselves of title to tide lands by specific conveyance, stated in *Carter* v. *Territory of Hawaii*, 14 Haw. 465, 470 (1902), that there was little, if any, doubt that Kamehameha III had the power to grant exclusive fisheries to any of his subjects if he desired to do so, even though a declaration made several years earlier indicated that the court then held a contrary view, citing *King* v. *Oahu Railway & Land Co.*, 11 Haw. 717, 725 (1899). The United States Supreme Court reversed the *Carter* decision, which had held that admitting that the claimants might have obtained rights to exclusive fisheries, they had not done so: *Damon* v. *Territory of Hawaii*, 194 U. S. 154 (1904); *Carter* v. *Territory of Hawaii*, 200 U. S. 255 (1906).

[42] *Territory of Hawaii* v. *Liliuokalani*, 14 Haw. 88, 89-90 (1902).

[43] *Brown* v. *Spreckels*, 14 Haw. 399, 404 (1902), 18 Haw. 91, 98 (1906); affirmed, *Spreckels* v. *Brown*, 212 U. S. 208 (1909).

[44] *Territory of Hawaii* v. *Liliuokalani*, 14 Haw. 88, 89 (1902).

the tract as following a certain line "running to the sea; thence along the sea at low water mark to commencement." The Territory sought to enjoin the claimants under the patent from removing sand and gravel from the land between high and low-water marks, alleging that Kamehameha V had no power to convey such land. The supreme court held that that king had such power, and reversed an order overruling a demurrer to the bill. Thus the result of this decision was that the terms used in the patent had the legal effect of conveying the tide land so described.

One of the contentions made by the Territory in the foregoing case was that the words "koe nae ke kuleana o na kanaka" contained in the patent and award, of which the English equivalent was "reserving however the people's kuleana therein," referred to land between high and low-water marks and reserved to the people all rights therein not expressly recognized as private rights. This, it was contended, reserved all rights excepting rights to fish and to remove coral rock. The supreme court held that the words had a well-understood meaning as used in conveyances in the Territory; that they meant the reservations of house lots and taro patches or gardens of natives within the boundaries of grants, and had no reference to public rights (at p. 95). (See p. 103, above.)

Same: Meaning of "Beach"

The word "beach" means primarily the space between high and low-water marks, and where used in a conveyance it would naturally and presumptively include at least that area.[45] However, the word in a popular sense may include more or less land above high-water mark, according to circumstances, and the word may be used in a deed in this popular sense if the parties so desire.[46]

The case cited in the preceding paragraph[47] was an action of ejectment for two pieces of land on the seashore, title to one tract being derived from a land commission award and patent, and title to the other from a deed from Kamehameha III. The government was not a party to this suit. In the award and patent the description of one boundary by monuments was "ma kapa o ke kai," which was translated as "along the edge or side of the sea." This was held to bring the land at least to high-water mark—the presumptive meaning of the term—even though the seaward course in the description was above high-water mark. But the diagram showed the boundary according to courses and distances and extended in dotted lines the two side boundaries and connected their ends with a line marked "ke kai" (the sea), the entire intervening space being marked "beach." Construing the natural monument and the diagram together, it was held that the intention was to convey the entire beach—that is, to low-water mark (at pp. 97-98). In other words, the circumstances were such as to overcome the presumption that a boundary "along the edge of the sea" was intended to run along the high-water mark.

The deed from the king conveyed an adjoining tract by courses and distances, and also by monuments except on the sea side, "and also the sea

[45] *Brown* v. *Spreckels*, 18 Haw. 91, 98 (1906). Affirmed, *Spreckels* v. *Brown*, 212 U. S. 208 (1909).

[46] *Brown* v. *Spreckels*, 14 Haw. 399, 408-411 (1902). In construing a deed, it was held error to direct a nonsuit on the ground that "beach" had a fixed legal meaning, for there were indications that a broader meaning was intended. This was an earlier appeal in the case reported in 18 Haw. 91, cited in the preceding footnote.

[47] *Brown* v. *Spreckels*, 14 Haw. 399 (1902), 18 Haw. 91 (1906).

beach in front of the same down to low water mark." There was a narrow strip between the seaward course and the line of ordinary high tide. It was held that, although the presumption ordinarily would be that "sea beach" means only the land below high-water mark, yet under the peculiar circumstances of this case a presumption arose that the words were used in the deed in a broader and more popular sense and that they meant all the land both above and below high-water mark. This presumption would control unless overcome by evidence to the contrary. In this case the evidence, instead of overcoming the presumption, greatly strengthened it (at pp. 99-101).

Accretion

The principle of the law of accretion as applied generally in other jurisdictions was adopted in *Halstead* v. *Gay*,[48] namely, that land above high-water mark, formed by imperceptible accretion against the shore line of a grant, belongs to the owner of the contiguous land to which the addition is made. This decision was cited in a subsequent case to support the statement that if plaintiff's predecessors in title owned to high-water mark, then plaintiff owned to high-water mark, even though that had become, owing to accretion, much farther out than it was formerly.[49]

Apportionment of Accretions

The question of apportionment of accretions between adjoining proprietors was raised in a subsequent appeal in *Brown* v. *Spreckels*.[50] The correct rule, it was stated, is that the division of accretions between adjoining proprietors should be equitable, with a view to giving each a fair portion of the accretions and access to the water, in view of the contour and location of the respective lands as they existed before the accretions were formed. The rule of proportionate frontage would perhaps be applied under ordinary circumstances; but it was not of universal application, as, for instance, where there was a deep indentation or, as in this case, a sharp projection. Here the new shore line curved outward toward the projection, and the ownership of the projection had not been established; it might be in the adjoining landowner. If the projection and the adjoining land actually were in separate ownerships, application of the strict rule of proportionate frontage would give the projection tract a broadening instead of its naturally narrowing shape seaward, and would tend to cut off the access of the

[48] 7 Haw. 587, 590 (1889). This was a case of trespass. Defendant did not seek to controvert the principle of law so declared, but claimed that the patented land, the description and bounds of which were given in the grant in the Hawaiian language, did not make the land and sea coterminous. The supreme court translated "kahakai" as "the mark of the sea, the junction or edge of the sea and land," and held that in the description of this survey it meant the high-water mark on the sea beach. "The intention is clear to grant to the sea, and make it coterminous with it." The plaintiff thereby had the rights of a littoral proprietor and had become entitled to the accretions. See discussion of this case above, pp. 213-214.

[49] *Brown* v. *Spreckels*, 14 Haw. 399, 405 (1902).

[50] 18 Haw. 91, 101-103 (1906). The point was raised in connection with an instruction to the jury that if any property in litigation consisted of accretions to land to which plaintiff had shown title, then plaintiff was entitled to his share of said accretions according to the rule of division of the new shore line in proportion to the frontage on the ancient shore line. The instruction was held to be erroneous, partly because it related solely to accretions to land to which plaintiff had shown title, which accretions therefore, ipso facto, belonged to him and which, being his own property, he could not be required to share with others; and partly because the rule, though perhaps correct under ordinary circumstances, did not apply to the circumstances of this case. However, the jury had not observed the instruction; and it was held that the verdict should not be set aside because, perhaps through inadvertence or misunderstanding, the jury failed to observe an erroneous instruction. This decision was affirmed in *Spreckels* v. *Brown*, 212 U. S. 208 (1909).

adjoining land to the bay. The jury had made no division of accretions, but had found that all accretions in front of the tract adjoining the projection belonged to the land in front of which they were formed. The court held that there were not sufficient data before the jury to enable them to make a proper division of the accretion, if any division should have been made, but that there was enough evidence to justify them in their finding as to the ownership of the accretion.

Eminent Domain

Statutory Provisions Relating to Water

Organic Act

Section 55 of the Organic Act contains the following proviso:

> That the legislature may by general act provide for the condemnation of property for public uses, including the condemnation of rights of way for the transmission of water for irrigation and other purposes.

Territorial Statutes

The statutes provide, in general, that private property may be taken for certain public purposes including, among other things, "sites for * * * wharves, docks, piers, dams, reservoirs and bridges, also all necessary land over which to construct roads, canals, ditches, flumes, aqueducts, pipe lines and sewers; * * * also all necessary land for improving any harbor, river, or stream, removing obstructions therefrom, widening, deepening or straightening their channels."[51] Property that may be taken includes: "All real estate belonging to any person, together with all structures and improvements thereon, franchises or appurtenances thereunto belonging, water, water rights and easements"; and property already appropriated to public use may be taken for a more necessary public use.[52] Benefits to the portion of the property not sought to be condemned, resulting from the construction of the proposed improvement, may be offset against the amount assessed as damages or compensation.[53]

Special provisions relate to the exercise of the power of eminent domain by the Territory, by counties, by the City and County of Honolulu, and by all political subdivisions.[54]

The exercise of the power of eminent domain by public utility corporations is subject to the approval of the Public Utilities Commission. Such approval may be granted only after an investigation by the commission, notice to the parties interested and to the public, and opportunity for a hearing.[55]

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[51] Rev. Laws Haw. 1945, sec. 301, amended by Sess. Laws 1945, Series A-8, Act 185. Jurisdiction and general procedure are covered in secs. 306-320.

[52] Rev. Laws Haw. 1945, sec. 304.

[53] Rev. Laws Haw. 1945, secs. 314 and 315.

[54] See particularly Rev. Laws Haw. 1945, secs. 308; 309; 314; 6083; 6101; 6521, subs. 21. Condemnation of "surplus water" and distribution conduit by Hawaiian Homes Commission: 42 Stat. L. 108, ch. 42, sec. 221 (included in Rev. Laws Haw. 1945, p. 70). Condemnation by Molokai Water Board: Rev. Laws Haw. 1945, sec. 12952 (Sess. Laws 1943, Series A-46, Act 227, s. 2).

[55] Rev. Laws Haw. 1945, secs. 321 and 322. Definition of public utility: Rev. Laws Haw. 1945, sec. 4701.

Irrigation corporations have special powers of condemnation.[56] "Corporations organized to develop, store, convey, distribute and transmit water for irrigation," having at least $50,000 of paid-in capital represented by assets of market value equal to the amount entered on the books of the company, may condemn rights of way for ditches, tunnels, flumes, and pipe lines for carrying water for "irrigation, fluming, mill use, generation of electricity and domestic purposes"; but no such corporation may exercise this power in more than one county. Any right of way so obtained lapses, and immediately reverts to the former owner, either (1) if the corporation fails during a period of one year to use the right of way for the purposes authorized by the statute, or (2) if the corporation uses or diverts or sells any water conducted through such right of way "for a purpose other than irrigation, fluming, mill use, generation of electricity and domestic purposes, as well as for the watering of livestock and industrial use if such industrial use does not exceed five per centum of the water conducted through such right-of-way."

Court Decisions Relating to Condemnation for Water Uses

The few principles of eminent domain (aside from matters of pleading) that the supreme court has had occasion to announce or to apply with respect to water rights, or rights of way for the conveyance of water, have been to the effect that the statutory remedy of the injured party, where it is adequate, is exclusive; that consent without prejudice to defenses in a pending condemnation proceeding does not bar maintenance of the proceeding; and that eminent domain and not confiscation is the constitutional means of taking privately owned water rights in time of peace, notwithstanding the existence of a supposed emergency.

Damages for the taking of water from plaintiff's land were claimed in an early case brought against the minister of the interior.[57] The court held that an act of the legislature, authorizing the minister of the interior to take whatever land and water might be required for the Honolulu water works and providing that compensation should be made to the injured parties, furnished these parties with an adequate remedy by which they could obtain redress and superseded the remedy at common law. The conclusive inference was that the statutory remedy was intended to be exclusive.

The answer by one of the defendants in a proceeding by a sugar company to condemn a right of way for a water pipe and flume, averred that the plaintiff had already constructed and was operating a pipe and flume over the line in question, with the written consent of the other defendant.[58] The latter, at the time the proceeding was commenced, was the legal owner of the land over which the right of way was desired, and the codefendant then claimed to be the equitable owner; subsequently a conveyance of the land was executed to this codefendant. The written consent in question was given after the suit was begun, and appeared to have been given without prejudice to defenses in these proceedings. The court saw

[56] Rev. Laws Haw. 1945, secs. 323-326.

[57] *Herring* v. *Gulick*, 5 Haw. 57, 59 (1884). The legislative act in question appears in Laws Haw. 1860, p. 24.

[58] *Wailuku Sugar Co.* v. *Spreckels*, 13 Haw. 527, 530 (1901).

no reason why the plaintiff could not take or continue the taking of steps to obtain a better right or title than it had under such consent.[59]

The supreme court held in the *City Mill Company* case,[60] as noted heretofore in connection with ground waters (see p. 182), that the Territory could not, in time of peace, take the rights of owners of land overlying an artesian basin for the benefit of the community, without making due compensation, regardless of the existence of a supposed emergency. It was stated that the right of eminent domain could be resorted to by the community for the acquisition of water supplies from other sources, whenever the waters should be needed.

[59] Much of this decision concerned matters of pleading. One point, however, involved the question of inability to agree with the party or parties across whose land the right of way was desired, which the statute then in force made a condition precedent to the bringing of suit (Civ. Laws Haw. 1897, ch. 114, sec. 1777 (Laws Sp. Sess. 1895, Act 18, s. 1)). Plaintiff had attempted and failed to agree with the legal owner before the suit was begun, and the evidence did not show an attempt to agree with the company then claiming to be the equitable owner. (Conveyance of the land to the latter was made after the suit was begun.) The court held that it was unnecessary for the plaintiff to attempt at that time to agree with the company, for the reason that the company was not then the owner; and that the statute did not terminate the suit upon a conveyance made by a defendant after suit had been entered, because of failure to attempt to agree with his grantee.

[60] *City Mill Co.* v. *Honolulu Sewer & Water Commission,* 30 Haw. 912, 935-936 (1929).

Chapter 7

MANAGEMENT OF THE HONOLULU WATER WORKS

The water supply of Honolulu, obviously, is of outstanding importance in the economy of the Territory. Even in 1940, 42 percent of the total population of the Territory lived in the city proper, and the proportion at the present time may be substantially greater.

The study of Hawaiian water laws upon which this report is based was made at the request and with the cooperation of the Board of Water Supply of Honolulu, which has charge of the Honolulu water works, largely because of important legal questions affecting the Honolulu water supply. A great deal of material has been published with respect to the physical problems of the local water supply, which were not a part of this study. In connection with the general problems of water law discussed elsewhere in this report, however, it is deemed desirable to outline some of the features of local management.

Geographical Terminology of "Honolulu"

The word "Honolulu," as used in connection with local government and water-supply management, appears in the names of areas having different geographical and jurisdictional limits. The several terms are defined by law as follows:

City and County of Honolulu

This is a political subdivision, having a city and county government, that includes the entire Island of Oahu. It also includes all other islands in the Territory not included in any county, and the waters adjacent thereto.[1]

Honolulu District

This is a political subdivision that comprises the portion of Oahu extending from Makapuu Head in Maunalua to Moanalua, inclusive. It also includes the islands not included in any other district. This is one of 7 districts into which the Island of Oahu is divided for election, taxation, educational, judicial, and other purposes.[2] It is also known as the "District of Honolulu," and covers the business and residential areas of the city as well as a large suburban area.

The Term "City of Honolulu"

This does not denote a governmental subdivision. As used for statistical and similar purposes to distinguish urban and rural communities, the expression means the same territory as is known as the "Honolulu District."[3]

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[1] Rev. Laws Haw. 1945, sec. 6501. This is part of the act providing a city and county government.

[2] Rev. Laws Haw. 1945, sec. 151, part (c), subsection 1.

[3] Rev. Laws Haw. 1945, sec. 6502, a part of the statute providing a city and county government for Honolulu. This section specifically delimits the "Honolulu District" as the portion of Oahu from Maunalua to Moanalua, inclusive, and the islands not included in any other district of Oahu, which is in harmony with the section cited in footnote 2 (sec. 151, pt. (c), subs. 1) creating the district for certain governmental purposes.

The Terms "Honolulu" and "District of Honolulu"

As used in the statute that provides for the Board of Water Supply of the City and County of Honolulu, these terms mean the judicial, educational, and taxation district defined by law as the "District of Honolulu" or "Honolulu District."[4] In other words, in the statutes relating to the Board of Water Supply, "Honolulu," "Honolulu District," and "District of Honolulu" are synonymous, and mean the area extending from Maunalua to Moanalua, inclusive.

The Term "Honolulu Water Works"

As used in the original statute of 1929 under which the Board of Water Supply was created, this term comprised the publicly-owned system supplying the District of Honolulu with water and water power.[5] As used in the 1939 amendment enabling the transfer to the Board of Water Supply of the rural water systems of the city and county, effective upon the taking of action by the board of supervisors (see p. 228, below), the term also includes the rural water systems of the City and County of Honolulu.[6]

Sources of Water Supply[7]

Water needed for domestic purposes in the early settlement adjacent to the harbor of Honolulu was taken principally from shallow wells, the larger supplies required for whalers and other vessels being brought in small boats from the upper portions of Nuuanu Stream. Attempts to pipe water from a distant source began in 1838, and a system that was completed in 1851 was apparently adequate for a few years only. A new project put into operation about 10 years later proved adequate for a time, but by 1878 it was evident that this system, in turn, had become outgrown. In fact, the ever-increasing demands for water for domestic and industrial purposes during the past one hundred years have made the conservation of existing supplies and the development of new sources of supply an almost continuous problem, and the history of the Honolulu water works is replete with projects for constructing new development works and for enlarging and extending the distribution system. This trend, of course, has been sharply accentuated by the war. The total water requirement for the city in 1944 was practically double the average for the 5 years ending with 1940.

Artesian Water

Artesian water was first developed in the Islands in 1879.[8] The city

[4] Rev. Laws Haw. 1945, sec. 6841.

[5] Sess. Laws Haw. 1929, Act 96, s. 1; Rev. Laws Haw. 1945, sec. 6841.

[6] Sess. Laws Haw. 1939, Series B-85, Act 253, s. 1; Rev. Laws Haw. 1945, note to sec. 6864.

[7] The historical statements herein, unless otherwise indicated, are taken from the Report of the Honolulu Sewer and Water Commission, January 1929, pp. 283-288.

The statements with reference to the present water supplies and their development and distribution are taken from Board of Water Supply, City and County of Honolulu, Eighth Biennial Report, 1939-1940, and Tenth Biennial Report, 1943-1944.

[8] The first flowing well in the Islands was completed September 22, 1879, on land belonging to James Campbell near Honouliuli, on what is now the Ewa Plantation. This "Pioneer Well" was drilled by James Ashley. Vaksvik, Knute N., "History of Artesian Development," in "Geology and Ground-water Resources of the Island of Oahu, Hawaii," Terr. Haw. Dept. Pub. Lands, Div. Hydrography, Bul. 1 (1935), p. 240, citing McCully, L., "Artesian Wells," Thrum's Hawaiian Annual, 1882, pp. 41-46. An account of the early wells drilled for both agricultural and municipal purposes is given in this bulletin, at pp. 239-250.

made use of this new source of water supply, beginning shortly after 1880, but it was some years before pumping to elevations above the piezometric surface (to which the water would rise by natural pressure), which at first was about 42 feet above mean sea level, made possible an adequate realization of this important source of water.

The present importance of the Honolulu artesian structure as a source of water supply for the city is shown by the following figures, which are taken from the Tenth Biennial Report of the Board of Water Supply (at p. 7). These figures show the water requirements for the city for 3 selected years, together with sources of supply, and the effect of the increases in demand occasioned by the war.

	Million gallons daily		
Sources of supply:	1938	1941	1944
Artesian structure:			
Honolulu: City system	16.9	23.9	33.6
Privately-owned systems	14.2	13.4	31.8
Halawa: City system	.....	.....	1.75
Total artesian	31.1	37.3	67.2
City—mountain tunnels and springs	4.2	2.57	1.69
Grand total	35.3	39.9	68.9

Thus, of the water used in the city—for domestic, municipal, industrial, and irrigation purposes—88 percent came from artesian sources in 1938 and 98 percent in 1944. The Halawa source, first drawn upon in August, 1944, is used to supplement and to relieve the increasingly heavy draft upon the Honolulu artesian structure.

The city has 6 pumping stations, exclusive of higher-level booster pumping stations. Three of these are located on the surface and pump water from artesian wells. The other 3, including the Halawa pumping station put into operation in August 1944, are located underground at the bottoms of inclined shafts; and they pump water that has been collected in infiltration tunnels driven from the bottoms of the shafts at and below the surface of the water table. These underground stations are located at inland points at which the water, though a part of the common supply of basal water, is not under artesian pressure.

There were 180 artesian wells in the Honolulu area in 1944. The city owned 30 of these, including the underground stations; 27 were in use and the 3 others in reserve. Of the 150 privately-owned wells, 65 were in use in 1944, 20 were unused, 62 sealed, and 3 lost.

Mountain Sources

Mountain sources consist of springs, and of tunnels that tap high-level ground-water supplies.

An additional means of adding to the ground-water supply from mountain sources, which has been under consideration and planning, is the diversion of water from streams into recharging tunnels driven into the Koolau lavas in the sidehills. The purpose is to cause the water to seep downward to the free-water surface of the Honolulu artesian structure and thus to increase the available artesian-water supply.

Shallow Ground Water

The shallow ground water underlying the lowland sections is not potable. However, it has been developed privately to some extent for air-conditioning and industrial purposes.

Distribution System

The distribution system of water mains and reservoirs operated by the city serves areas ranging from sea level to 1,100 feet in elevation, and covering approximately one-third of the total area of the District of Honolulu.

Agencies Charged with Management of the Honolulu Water Works

Hawaiian Government

Under the Kingdom of Hawaii the government assumed the function of supplying Honolulu with water, through the minister of the interior. Although the government on at least one occasion considered the advisability of granting a franchise to private enterprise—during the late seventies, at a time when the city had outgrown its existing system[9]—it appears that the Honolulu water works remained in the ownership and control of the central government of the Islands until 1914.

City and County of Honolulu

The Territory in 1914 transferred the management of the Honolulu water works to the City and County of Honolulu.[10] Operation of the system remained the function of the board of supervisors until 1929, when it was transferred by act of the legislature to the newly-created Board of Water Supply of the City and County of Honolulu. In the meantime, in 1925, the construction of new city water works financed by new bonds had been made the exclusive responsibility of a commission appointed by the Governor, known as the Honolulu Sewer and Water Commission, and this responsibility with respect to new water-works construction within the Honolulu District was likewise transferred to the Board of Water Supply upon its creation.

[9] Report of the Honolulu Sewer and Water Commission, January 1929, p. 284.

[10] Sess. Laws Haw. 1913, Act 138. This act provided that the transfer should be made not later than July 1, 1914 and, among other things, that all revenues from such works should be expended for operation and maintenance, interest upon and principal of bonds for extensions and improvements, and for extensions and improvements, and that the Territory should be paid the amounts of interest and principal with respect to Territorial bonds theretofore issued on account of such works. An amendment in 1915 (Sess. Laws Haw. 1915, Act 182) stated the amount of bonded indebtedness then outstanding against the Territory on account of the water works. The supreme court, in *Holt* v. *Conkling*, 25 Haw. 335 (1920), held that the legislative act transferring the system to the city and requiring it to make up, out of general revenue, any deficiency in the fund for payment of bonds, did not authorize or require the city to incur an indebtedness. Hence the fact that the stated amount of Territorial bonds was more than 1 percent of the assessed value of property within the city, did not bring the case within the provision of the Organic Act (sec. 55) empowering the legislature to authorize political subdivisions to incur indebtedness not in excess, in any one year, of 1 percent of the assessed value of the property within them.

Honolulu Sewer and Water Commission

The legislature in 1925 created the Honolulu Sewer and Water Commission, and charged it with the exclusive responsibility for expending the proceeds of a bond issue in the construction of new units of an adequate sewer and water system in the District of Honolulu.[11] Completed units were to be turned over to the city and county for operation and maintenance. This act was amended in 1927 to provide that the commission might expend such portion of the funds as it might in its discretion determine, by contract by or through the board of supervisors.[12]

The commission in 1927 was also given broader powers of investigation than formerly, and was accorded extensive control over the development of artesian water in the Honolulu District.[13] It was this legislation that was involved in the *City Mill Company* case,[14] which has been discussed at length in connection with rights to the use of ground waters (see p. 179 and following).

The Honolulu Sewer and Water Commission, then, was an investigational, planning, and construction agency, and in addition it had supervisory powers over the installation of new private artesian wells within the Honolulu District. Its authority to construct works extended to the sewer and water works of the city and county located within the Honolulu District. Operation and maintenance of sewer and water works, however, were not delegated to the commission, but remained the function of the board of supervisors of the city and county.

The Sewer and Water Commission was abolished by the legislature in 1929, in the act under which the present Board of Water Supply was created, effective upon the taking effect of that act.[15]

Board of Water Supply, City and County of Honolulu

Creation and Purpose

The Board of Water Supply, City and County of Honolulu, in which control of the Honolulu water works is now vested, was created in 1929.[16]

[11] Sess. Laws Haw. 1925, Act 150.
[12] Sess. Laws Haw. 1927, Act 40.
[13] Sess. Laws Haw. 1927, Act 222.
[14] *City Mill Co.* v. *Honolulu Sewer & Water Commission,* 30 Haw. 912 (1929).
[15] Sess. Laws Haw. 1929, Act 96, s. 24.
[16] Sess. Laws Haw. 1929, Act 96, s. 2 (Rev. Laws Haw. 1945, sec. 6842). Act 96, creating the board and defining its powers and duties, became effective July 1, 1929.

The present statutory provisions relating to the creation, organization, powers, and functions of the Board of Water Supply, enacted in Sess. Laws 1929, Act 96, and since amended, and those relating to the control of artesian wells in the Honolulu District as enacted in Sess. Laws 1927, Act 222 and later amended, are compiled in Rev. Laws Haw. 1945, secs. 6841 to 6875, inclusive.

Other current statutory provisions relating either specifically or generally to the Board of Water Supply and its activities include the following:

Removal of members of the board: Rev. Laws Haw. 1945, sec. 6575.

Provision *re* suspension of officers or employees not applicable to department of Board of Water Supply: Rev. Laws Haw. 1945, sec. 6575.

Revenue bond act of 1935, authorizing political subdivisions for a limited period of time to issue revenue bonds for financing revenue-producing improvements, granting additional powers, and specifically including the Honolulu Board of Water Supply: Rev. Laws Haw. 1945, secs. 6081-6095.

County and city and county refunding bonds: Rev. Laws Haw. 1945, secs. 6067-6077.

Furnishing of potable water by any person or organization: Rev. Laws Haw. 1945, secs. 11781-11783.

Rules and regulations having the force of law, general provisions: Rev. Laws Haw. 1945, secs. 466-476. (Board of Water Supply, Rev. Laws Haw. 1945, sec. 6873.)

Eminent domain: See p. 220, above.

Bonds, Sewer & Water Commission, Board of Water Supply, Rural Water Works, and Suburban Water System, City and County of Honolulu: See Rev. Laws Haw. 1945, Appendix, Note 8, pp. 1685-1686.

Authority of Board of Supervisors, City and County of Honolulu, to enter into contracts for purchase of artesian and other waters: Rev. Laws Haw. 1945, sec. 6521, subsection 19.

The duty of the board, according to the statute under which it was created, "shall be to manage, control and operate the water system and properties of the City and County of Honolulu, for the supplying of water to the public within the District of Honolulu." This new board not only succeeded the Sewer and Water Commission in the exercise of all of its powers and functions with respect to the water supply of the Honolulu District, but also succeeded the board of supervisors of the city and county in the control and operation of the Honolulu water works, that is, the system serving the District of Honolulu. The new board also succeeded the Sewer and Water Commission in the exercise of the latter's powers of investigation of water supplies on the Island of Oahu and of uses of water within the Honolulu District, and of its regulatory powers with respect to artesian wells, and uses of water from them, within the district.

The statute transferred to the Board of Water Supply only the public water facilities of Honolulu, not the sewer facilities. Management of the sewer system was thus divorced from that of the water system, and remained the function of the board of supervisors.

Under the 1929 statute, the Board of Water Supply acquired control over only the water works for the service of the Honolulu District, which extends from Maunalua to Moanalua, inclusive, on the south side of Oahu. However, in 1939 the authority of the Board of Water Supply was extended by the legislature to include the rural water systems of the city and county, such authorization to become effective at such time as the board of supervisors should deem it advisable to provide by resolution for the transfer to the Board of Water Supply of the control and operation of the funds, property, and obligations of the rural water systems.[17] This authorization related specifically to the rural water systems under the management of the department of public works of the city and county. The transfer of the rural water systems so authorized has not yet been made.

Validity of Legislation Creating the Board of Water Supply

The members of the newly-created board, on organization, requested from the board of supervisors possession and control of all property the transfer of which was required by the 1929 statute. This was refused, and the cause was submitted to the supreme court upon a statement of agreed facts.[18] The sole questions determined by the court were as to the validity of the legislation (1) under the Organic Act, and (2) under general principles of constitutional law. A claim of violation of the Federal Constitution was abandoned at the oral argument (at pp. 221-222).

The supreme court devoted considerable attention to the claim that the statutory provision for appointment of the first appointive members by the Governor, instead of by the city and county authorities, was invalid. It was held that the people of Hawaii had no inherent, unwritten right to municipal self-government free from the control of the legislature (at pp. 223-228). Congress, which has general and plenary power over the Territories, had left to the legislature in the Organic Act the determination of

[17] Sess. Laws Haw. 1939, Series B-85, Act 253 (Rev. Laws Haw. 1945, secs. 6863, 6864, and note to sec. 6864).

[18] *McKenzie* v. *Wilson*, 31 Haw. 216 (1930).

the creation of municipalities and the appointment or election of municipal officers (at pp. 228-231). Hence, this provision did not violate the Organic Act (at pp. 230-231).

The view that a municipality created by the Territorial legislature, and the powers granted it, remain subject to the control of the legislature, accords with the weight of authority where no constitutional restrictions exist to the contrary (at pp. 233-238). "That property used in a system of water works and the powers granted in connection therewith may, as freely as other property and powers, be withdrawn from the jurisdiction of the municipality is specifically held in *Trenton* v. *New Jersey*"[19] by the United States Supreme Court (at pp. 238-239).

The act, it was held, did not contain an invalid delegation of power to an administrative board to issue bonds. It simply authorized the board to say when bonds that had been properly authorized by the legislature should be issued—a matter that could be properly left to administrative discretion (at p. 239).

The power conferred upon the board to prescribe and collect water rates was held to be not an exercise of the power of taxation. The purpose of the legislation was to provide for the service of water to those who chose to secure it from that source. Thus the rates were intended as compensation for water purchased—the purchase price of the water. Such rates do not constitute a forcible exaction from the residents for the support of the government (at p. 241).

The court chose to treat the legislation as taking the possession and control of the water works away from the city and county completely and for all time, rather than as merely a temporary expedient. On this basis the conclusion reached was that (at p. 242):

> In our opinion it was within the power of the legislature of Hawaii to pass Act 96 and to take away from the City and County of Honolulu, either temporarily or permanently, the water works system and all property used in connection therewith, and to vest the possession, control and direction of the property and water works in the board of water supply. Judgment will be entered in favor of the board of water supply in accordance with the terms of the submission.

Organization of the Board

The Board of Water Supply is an independent agency insofar as the exercise of its functions is concerned. It consists of 7 members, of whom 5 are appointed and 2 are ex-officio members, viz. the superintendent of public works of the Territory and the chief engineer of the department of public works of the city and county. The first appointive members of the board were appointed by the Governor; their successors are appointed by the Mayor, with the approval of the board of supervisors, and may be removed in the same manner.[20]

[19] 262 U. S. 182 (1923).

[20] Rev. Laws Haw. 1945, sec. 6843, provides that the members of the board "may be removed from office in the manner provided by section 6575." Section 6575 provides that the Mayor, with the approval of the board of supervisors, shall appoint various city and county officials and "with such approval may summarily remove from office any of such appointed officers," with certain designated exceptions; and that he shall give to the board of supervisors a written notice thereof and of his reasons therefor, and send a copy thereof to the person so removed.

Direction of Affairs

The board is required by law to hold regular meetings at a designated time and place. It may adopt necessary rules and regulations. A majority constitutes a quorum, but an affirmative vote of at least 3 members is necessary to validate any action of the board.

The statute provides that the board shall appoint a manager, to serve at its pleasure. He is known as manager and chief engineer. He is given by the statute full power to administer the affairs of the water works, subject to the board's direction and approval.

The board has a large number of employees, including a staff of skilled technicians. Their employment is subject to civil-service regulations.[21]

The city and county attorney is the legal adviser of the board, and prosecutes and defends suits as the board may require. He details to the board such deputies as the board deems necessary to conduct its legal work. The board is also authorized to employ an attorney to act as its legal adviser and to represent it in litigation.

Nature of the Board's Functions

The responsibility of the Board of Water Supply, in its last analysis, is to provide water for the public within a portion of Oahu, particularly the metropolitan area of Honolulu. To this end, the board is vested with powers of two general kinds, which rest upon different legal bases but are designed to effectuate the same ultimate purpose: (1) Effective management of the public water works under the board's control, including (a) construction, maintenance, and operation of the water works, (b) investigations of new sources of water supply to supplement those in use and those already acquired for future use, and (c) planning for the acquisition and utilization of new sources of supply. (2) Supervision over the installation, maintenance and operation of privately-owned artesian wells in the Honolulu District, and over the uses of water therefrom.

The powers of investigation and planning are such as naturally would be accorded to an administrative agency, vested with the control of publicly-owned water works for the service of a community in which demands for water have been constantly increasing.

The authority in the second general group—supervision over privately-owned artesian wells within the Honolulu service area—rests upon a legal theory that contemplates more than simply the acquisition and construction of works and service of water to the public. It invokes the police power of the Territory in the regulation of diversions and of uses of water diverted, by means of privately-owned wells, from a common supply of artesian water that is drawn upon not only by individuals and private organizations, for private use, but by the city on behalf of the community that it serves. The purpose of such public regulation is to preserve the common water supply for the continued use of the community—to protect the common supply against impairment in quantity and quality that would result from the injudicious operation of private artesian wells. The city system draws heavily upon the water of the Honolulu artesian structure, which is the principal source from which both public and private water supplies used in the city are obtained; but privately-owned wells diverted 46 percent of all of the

[21] The members of the board and the manager are exempted from the civil-service act: Rev. Laws Haw. 1945, sec. 74.

water obtained from that source in 1938, 36 percent in 1941, and 49 percent in 1944 (see page 225). Thus the Board of Water Supply, as the public agency to which the management of the city system is entrusted, is deeply concerned with the preservation of the artesian source; and in addition to its ordinary functions of management, the board represents the Territory in its authority to regulate private uses of water that affect that source of supply.

Functions of Management

The statutory provisions with respect to investigations of water resources and planning for water conservation and utilization have been summarized heretofore (see p. 200).

The authority and duty of the board include the determination of policy for the construction of works, and the making of additions, extensions, increases, betterments, and improvements; the expenditure of funds for such purposes; the execution of contracts for work and for the purchase of supplies, materials, and equipment; the acquisition and taking, in the name of the city and county, by purchase, lease, or otherwise, of all property necessary for the construction, extension, maintenance, or operation of the works under its control; the sale or other disposition of any buildings or personal property no longer needed; the fixing of rates and charges for water; and the collection and expenditure of funds derived from the operation of the water systems.

All funds in the city and county treasury credited to any of the systems transferred to the board were directed by the statute to be placed to the credit of the board; and all outstanding obligations in connection with the operation of such systems were directed to be paid by the board out of its water works fund. The treasurer of the city and county is required, when directed by the Board of Water Supply, to sell bonds authorized for the acquisition, construction, replacement, extension, or completion of the water works; to place the proceeds in a separate fund for such purposes; and to disburse the board's funds upon proper warrant and voucher. Receipts from the collection by the board of rates and charges for water service, as well as from other sources excepting the sale of bonds, are paid daily into the city and country treasury and maintained in a special fund, from which the board may make appropriations for designated purposes. Collections of rates and charges may be enforced by any appropriate means, including the discontinuance of service to delinquent consumers, or by civil action.

The board of supervisors of the city and county is prohibited from purchasing real or personal property for the purposes of the Board of Water Supply, or from disposing of any real property under the management of the latter, without the prior written approval of the Board of Water Supply.

The Board of Water Supply may sue and be sued under its own name.

Regulation of Artesian Wells and Water Within the Honolulu District

The statute providing for this has been summarized above (see pp. 200-202).

The board's power, as the representative of the Territory, to regulate, in the interest of the public welfare, private uses of water that affect the principal source of water supply of the Honolulu community was inherited from its predecessor, the Honolulu Sewer and Water Commission. This

former commission had been entrusted with the construction of water systems for Honolulu, but not with their operation and maintenance. An even earlier law had vested in the Superintendent of Hydrography the regulation of uses of water from artesian wells throughout the Territory (see p. 198, above). This earlier law still applies in all areas outside of the Honolulu District. Within the Honolulu District, the regulatory power of the Superintendent of Hydrography under the general law has been superseded by that accorded to the Board of Water Supply under the later local statute. This Honolulu District statute subjects to public regulation the installation of private artesian wells, as well as uses of artesian water from them.

The character and extent of this regulatory power have been discussed in the chapter relating to ground waters (see pp. 198-204, particularly pp. 202-204).

Judicial Construction of Management Functions

The number of cases dealing with public water supplies that have reached the Supreme Court of Hawaii has not been large, and most of them have involved questions arising out of the furnishing of water to consumers in Honolulu. These questions have dealt mainly with the exercise of governmental functions in the administration of a public utility.[22]

Reciprocal Relations of Government and Water Users

As "Water is a public necessity, and especially in our climate," the duty that the government assumed with reference to the Honolulu water supply required the making available and the equitable distribution to all ratepayers of all water reasonably required, and that could be reasonably secured, for such purpose.[23] But the public owed reciprocal duties, viz., to pay reasonable rates and to obey reasonable rules and regulations. In time of water shortage it was reasonable for the government to restrict the use of water by ratepayers, beginning with the least necessary use, irrigation. And a water user who violated a reasonable regulation might be deprived of his water privilege.[24]

Exercise of Administrative Discretion

As the minister of the interior was entrusted with the control of the Honolulu water system, it was decided in an early case,[25] on the basis of

[22] In addition to the cases discussed herein, *Howland* v. *Oahu Railway & Land Co.*, 16 Haw. 634 (1905), involved the interpretation of a statute and contract concerning the free use of water from the Honolulu water works in the maintenance and operation of a railroad (Rev. Laws Haw. 1905, secs. 783, 784, 810, 811 (Laws Haw. 1878, ch. 29; Laws 1888, ch. 62); present statute concerning free use of water, Rev. Laws Haw. 1945, sec. 6857). *Holt* v. *Conkling*, 25 Haw. 335 (1920), has been referred to above, in footnote 10, in connection with the question as to whether the legislative act transferring the Honolulu water works to the city authorized the city to incur an indebtedness or imposed an indebtedness upon it. *McKenzie* v. *Wilson*, 31 Haw. 216 (1930), has been discussed on pp. 228-229 in connection with the validity of legislation creating the Board of Water Supply.

[23] *Riemenschneider* v. *Wilson*, 6 Haw. 375 (1882).

[24] It was stated in this case (at p. 380) that under existing laws the only way in which the rules could be enforced was by depriving the offending party of his water privilege. Also see *Colburn* v. *White*, 8 Haw. 317, 319 (1891).

[25] *Way* v. *Gulick*, 5 Haw. 70 (1884). The court stated, at p. 71: "There are no municipalities in this country, but the duties and responsibilities which are assumed by and imposed upon the Minister of the Interior, relative to the internal affairs of the country, are similar to those which pertain to municipalities in other countries. * * * No question like this has been decided in our courts. It should therefore be decided by construing our statutes in the light of foreign authorities."

foreign authorities, that the supplying or withholding of water for public or private uses rested in the discretion of that officer. Consequently, in the exercise of that discretion, neither he nor the government could be held liable to a private citizen for damage resulting from an insufficient supply of water at a fire. Nor, it was held in another case,[26] would the exercise of discretion by the superintendent of water works, in cutting off water from one who had violated a regulation of the minister of the interior, which action the regulations authorized the superintendent to take, be interfered with under an application for a writ of mandamus; the general rule being that if a public officer is vested with discretion, and exercises it in good faith, the courts will not interfere by mandamus.

Exercise of the Police Power in Imposing Regulations upon the Installation and Maintenance of Private Artesian Wells in the Honolulu District

Considerable space in the chapter relating to ground waters has been devoted to the supreme court decision[27] in which the power of the Territory to regulate the installation and operation of artesian wells was construed (see pp. 179-198 and 203-204). This question need not be again discussed here. It is sufficient to state, for the sake of completeness, that the supreme court affirmed the power of the Territory to impose reasonable regulations governing the installation and maintenance of private artesian wells, and intimated that "it may be" that in a serious emergency restrictions upon the use of water from all wells would be justified; but held that the police power did not extend to prohibiting a landowner from drilling a well on his own land so long as the use of existing wells was allowed. The present statute contemplates such reasonable regulations, and also authorizes the board to impose restrictions that operate uniformly upon uses of artesian water.

[26] *Colburn* v. *White*, 8 Haw. 317 (1891). Under another view of the case, the court held that if the obligation to furnish water arose solely from contract relations between government and consumer, it would not be enforced by mandamus. Chief Justice Judd had previously held in *Riemenschneider* v. *Wilson, supra,* footnote 23 (no appeal being taken to the full court), that while mandamus would lie against the superintendent of water works for a plain violation of the duty that the government had assumed in supplying Honolulu with water, it would not issue to compel resumption of water service to one who had violated a reasonable regulation of the minister of the interior.

[27] *City Mill Co.* v. *Honolulu Sewer & Water Commission,* 30 Haw. 912 (1929).

Appendix A

LEGISLATION CITED

Appendix B

COURT DECISIONS CITED

HAWAIIAN CASES

SUPREME COURT OF HAWAII

FEDERAL CIRCUIT COURT OF APPEALS

UNITED STATES SUPREME COURT

[1] Decision by single justice, from which appeal was not taken to the full court.

[2] Final decision by single justice, by agreement of the parties.

OTHER CASES

STATE SUPREME COURTS

FEDERAL COURTS

UNITED STATES SUPREME COURT

ENGLISH COURTS

INDEX[1]

[1] The letter "n" after a page number indicates that the reference is to a footnote on that page.